
PIONEERS

of the

Modern World

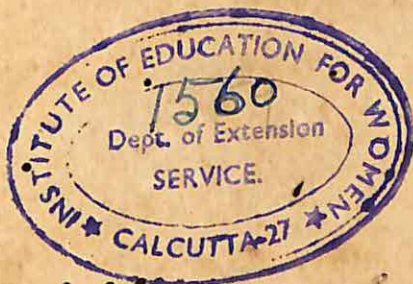
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PIONEERS OF THE MODERN WORLD

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PREFACE

THESE slight, unadorned sketches of some of the Pioneers of the Modern World owe their origin to a conversation I had in the train (in 1940) with a young soldier who was expressing his regrets that he had never "done" Modern History at school. I challenged this disturbing statement, but my young friend stuck to it.

The "lives" of these pioneers may perhaps provide a simple introductory survey of the confused scene of the last hundred years or so from Napoleon to Roosevelt. They include but one soldier. Our younger people of to-day—whose task and outstanding hope it is to create a new world (and may they show more wisdom than the men of my generation !)—appear to have little desire to read about war and battles. Here they will find some of the pioneers who have done something to enrich and ennoble rather than to destroy life and civilization : not only Napoleon, but Beethoven, the master of music ; Robert Owen, the social reformer ; Stephenson, the engineer ; Faraday, pioneer of electrical science ; Garibaldi, the "bold buccaneer" ; Lincoln, hero of America's crisis ; Bismarck, maker of that modern Germany which has been the persistent disturber of the modern world's peace ; Pasteur, conqueror of disease and pain ; Lister, pioneer of modern surgery ; Carnegie, exemplar of big business and large-scale philanthropy ; Rhodes, imperial visionary and statesman ; Woodrow Wilson, one of the pioneers of a world union for peace ; Ronald Ross, pioneer of tropical medicine ; Madame Curie, discoverer of radium ; Tagore, India's mediator between East and West ;

PREFACE

Lloyd George, architect of victory in the First World War; Lenin, maker of the New Russia; Marconi, pioneer of wireless; and Roosevelt, the great President of the United States.

In their appropriate places, in chapters VI, VIII, and XX, readers will find mention of the Nazi and Fascist, Hitler and Mussolini. The architects of victory in the Second World War—Roosevelt, Stalin, and Mr. Winston Churchill, greatest of all our war leaders—are the subject of the last chapter.

Several of these pioneers—so it turns out—were of “humble origin” and testify that whether or not there is for all “*une carrière ouverte aux talents*,” at least where there’s a will there’s a way. Which of them were apostles of Liberty—which some others of the twentieth century more totalitarian miscall anarchy—readers must decide for themselves.

E. H. C.



PIONEERS OF THE MODERN WORLD

I

NAPOLEON BONAPARTE (1769-1821)

CORPORAL TO EMPEROR

THERE is a grandeur about the very name Napoleon. We speak of the "Napoleonic era" and the "Napoleonic legend." We say that a man is a "Napoleon of industry," when we mean that he is a powerful and controlling personality. We even have an expression to "go nap," meaning to take the utmost risk in order to win. It would be difficult to think of any other man in the history of the world whose name suggests so much.

All this makes us picture a majestic figure with almost magical power. When we look at the real Napoleon, what do we find? He was born in the wild and poverty-stricken island of Corsica, a bitter enemy of France, with all the hot temper and changeableness of an Italian. He was poor and had little education

except that of the military schools. His manners were awkward and his movements clumsy. As a young man he was morose and silent ; as he grew older he talked a great deal and some of it was nonsense. His body was stunted and his health was soon undermined. He was cold and ungenerous, never conspicuously brave, and without geniality or charm.

How can we reconcile the two—the Napoleon of legend and the Napoleon of fact ? That is a mystery which every admirer and hater of Napoleon has tried to solve, and it still remains a mystery. But to try and make the figure of Napoleon come alive is one of history's most fascinating games.

Napoleon's career was a short and a very extraordinary one. It fell into three periods : in the first the meteor shot into the sky ; in the second it lit the whole of Europe with its blaze ; in the third it fell to earth.

When we look at the first period (1793–1804), we are at once faced with a startling fact. How did it happen that Napoleon, at the age of twenty-six, who only four years before had been an unpopular young foreigner in the French Army, found himself (1796) Commander of the "Army of Italy," victorious in many fights, and the adored of his soldiers ?

In order to understand how this came about, we must remember that Napoleon was a child of the French Revolution. The words "liberty, equality and fraternity," especially the second, really had some meaning ; and promotion in the army, as elsewhere, was open to anyone whose ability deserved it. The Revolution recognized the claims of Corsica, which now became a Department instead of a Dependency of France. Napoleon took service with his adopted country. He showed great shrewdness and imagina-

tion in organizing the defence of Toulon (1793) against the British fleet, and Carnot, war-minister of Revolutionary France, was quick to reward merit. It is almost certain that never before in the world's history would anyone as young and unknown as Napoleon have had such a grand opportunity.

It was in Italy that the meteor first appeared in the sky. There were two reasons for Napoleon's early success in Italy where he fought the Austrian masters of Lombardy. One was the spirit of his army; for it was a people's army, fighting for France and for the ideas of the Revolution. Later on in his career, Napoleon's army was composed only partly of Frenchmen, and many of his troops served unwillingly and without ideals. But the Italian campaign showed Napoleon at his best, and his army was enthusiastic in spite of the hardships the men had to undergo.

The other reason for Napoleon's success was, of course, his own character. His self-confidence was colossal. He knew that he was destined for great things, and this belief has led men to speak of him as the "Man of Destiny." After the victory in 1796 over the Austrians at Lodi in Italy—where he won the epithet "The Little Corporal"—he wrote, "I feel that deeds await me, of which the present generation has no inkling." And again, "Everything has happened as I foresaw. So will it be in the future. I shall make my way whithersoever I will." He was so sure of his own great future that he inspired his army to feel the same. His proclamations to the soldiers struck the right note. They were full of spirit, urging the men to sacrifice themselves for France, praising them for their courage, and assuring them of further victories. Napoleon always praised his armies, and

rewarded gallantry with many decorations. In this he was a great contrast with Wellington, who was inclined to belittle his troops.

Napoleon's Egyptian expedition (1798-9) when, in order to ruin England, he hoped to make himself master of Egypt and so of the East, was a ghastly failure. Half his army perished, and Nelson by the Battle of the Nile cut off his retreat; but so glowing was his account of his own success, and of the prosperity of Egypt under his rule, that his reputation again soared, and he crowned it by another victorious Italian campaign.

The French Republic had lost Italy three years after Napoleon's victory at Lodi. But before reconquering Italy, Napoleon suddenly overturned the French Government (the Directory) and made himself (1799) First Consul. He then showed that he had statesmanship as well as military genius. Peace, order and efficiency reigned once more in France. His system of law, the Code Napoléon, survives to a great extent to-day, and was due very largely to the energy and imagination of Napoleon himself. He let the peasants keep the lands they had seized during the Revolution; he made friends with the Church, and he built roads and schools.

When in 1804 the drab-looking, determined little man seized the Imperial crown from the hands of the Pope and crowned himself and his wife Josephine in Paris at the cathedral of Notre Dame, it seemed as if the fairy tale of Napoleon's first period had reached its happy ending, and his meteoric rise had reached its peak. "There is nothing great left for me to do," complained Napoleon, but he had forgotten for a moment his unresting destiny.

Let us now look forward over eight years—the years

(1804-12) of Napoleon's greatest glory. It is 1812, and Napoleon is in Moscow. He is forty-three, Emperor of France and King of Italy. He has married an Emperor's daughter and has an heir. His Empire covers nearly all Europe, and he reigns as absolute monarch over a hundred million people. And yet, as he is forced to retreat from Moscow, he is on the verge of failure and catastrophe.

"I envy the poorest peasant in my dominions," he said towards the end of his power; "I am the only person whom an inexplicable fate leads back ever and again into the field." It is quite true that, in spite of his peaceful triumphs, Napoleon felt that his ambition could be achieved only through war. He always thought in terms of large armies. Although he hated to see individuals suffer, he was quite content to sacrifice thousands of men in warfare, and like a craftsman to use his soldiers as the tools of his trade. "Europe," he said, "is nothing more than an old woman, and with my eight hundred thousand men I can make her do whatever I please."

This is what makes the eight years of Napoleon's second and most dazzling period so terrible. Though Nelson's victory at Trafalgar prevented Napoleon's invasion of England, in that same year of 1805 at Ulm and Austerlitz he crushed Austria; in 1806 at Jena he crushed Prussia; in 1807 at Friedland he crushed Russia. From Ulm to Austerlitz, from Jena to Friedland, his military genius in those battles was triumphant over Europe; but his conscript armies, composed of French, Bavarians, Saxons and others, were sacrificed ruthlessly to the needs of his strategy. His victory at Friedland was followed by the Treaty of Tilsit, concluded on a barge on the river Niemen. By this treaty, Napoleon—who had just

abolished the ancient Holy Roman Empire—combined with the Czar Alexander to dominate Europe. Then came his Spanish campaign and his first check, with the stubborn Spanish revolt aided by Wellington. His aim was to destroy the power of England and her allies who formed a barrier to his further conquests. In spite of Nelson's victories and England's supreme sea-power, he came very near to gaining mastery over the whole of Europe.

The story of these years is mainly a story of warfare, and the campaigns of more than a hundred years ago have very little bearing on the world of to-day. Napoleon's ambition for conquest and his sacrifice of human life seem often pointless; yet he did, as his writings and sayings testify, have a clear end in view. "There will be no peace in Europe," he said on the outbreak of war, "until the whole continent is under one suzerain."

This idea of a united Europe under a single ruler takes us back a thousand years to the days of the Holy Roman Empire, to Charlemagne crowned Emperor by the Pope on a Christmas Day at Rome. It also carries us on to the ideal of a modern French patriot, Aristide Briand, who after the First World War worked and planned for a "United States of Europe," based on a league of nations. Napoleon would have been too much of a bully to be a good member of a league of nations, and his idea of unity depended on himself as Dictator. However, he did use that very phrase "the United States of Europe" as expressing his ideal. "The same law," he said, "must run through Europe. I shall fuse all nations into one." Napoleon wanted a common legal code, a common Court of Appeal, common coinage and weights and measures throughout Europe. If he had achieved his

aim, Europe would have become as one nation, and any who travelled in it would always have been in a common fatherland.

The last period (1812-15) of Napoleon's life is one of failure. His overmastering ambition led him into blunders as great as his victories. The Egyptian expedition had been a blunder, and so were the blockade against England, the Spanish War and the invasion of Russia. By forbidding other countries to trade with England he caused great suffering to his allies, and roused England to even greater efforts. The long, wearying warfare of 1807-13 in Spain wore Napoleon down in men, money and confidence, while Wellington from the Lines of Torres Vedras and throughout this Peninsular War proved a patient and stubborn enemy.

Seven realms rallied to his standard in 1812 when he wanted to teach Russia a lesson. He reached Moscow, and saw that the Russians were burning it rather than submit. But the army for the Russian campaign was far too large. Napoleon was not ready for war in such a vast unconquerable land; he was tired and in bad health, and his subjects were sick of slaughter. Three hundred thousand men perished in Russia, only a tenth of them French. Russia in saving itself had saved Europe.

The next year, in 1813, came the uprising of the nations of Europe in the name of liberty; Napoleon was utterly defeated at the Battle of Leipzig, and at the same time Wellington was defeating the French on the Spanish-French frontier. The Allied cause had triumphed even though, since the Younger Pitt's death some years earlier, it had no outstanding figure to lead it. The "Spanish ulcer," Moscow, exile at Elba, Wellington's victory at Waterloo, exile at St. Helena—we picture tragedy and failure.

When Napoleon was told before the Battle of the Nations at Leipzig in 1814 that he was outnumbered by three to one, he replied, "I have fifty thousand men. Add myself and you get one hundred and fifty thousand." And when, after the battle of Waterloo, the British ship *Bellerophon* sailed into Plymouth harbour with Napoleon's short and stocky figure mounted on the poop, the thousands of his English enemies who had gathered to catch a glimpse of the terrible "Boney," all bared their heads. These are but two of the numerous stories which illustrate something of Napoleon's spell.

The life which began in obscurity, and ended in failure, long magnetized Europe. His name still dwarfs all others of his century. "His was the most splendid genius that has happened on earth; he was as great as any man can be without virtue"—these are the verdicts of great historians. But even Napoleon asserted that the spirit is greater than the sword.

Napoleon failed to make France greater; he failed to establish his own dynasty; he failed to crush England and her Navy; he failed to keep the loyalty of his family and his friends. Yet his personality, his sense of destiny, his energy and his soaring ambition made even failure seem like success.

Till the rise and fall in our days of Adolf Hitler, a lesser but even more ruthless man, Napoleon was the great modern example of that reckless and defiant insolence which formed the matter of ancient tragedy and is at war with the harmonies of human life.



II

BEETHOVEN (1770-1827)

MASTER OF MUSIC

IN JANUARY 1815, while Napoleon on Elba was planning his escape, a concert was held in Vienna attended by all the grand people who were gathered there to settle the affairs of Europe. It was the last public performance of a pianist who had become so deaf that he could not tell how loudly or how softly he was playing. The crowded audience of distinguished people had gathered for that concert because the deaf pianist was the greatest Master of Music, perhaps of all time—Ludwig van Beethoven.

Even the name of Napoleon does not dwarf that of Beethoven. Like Napoleon he was always very sure of his own greatness. When, as a young man who had composed nothing of importance, he was rebuked for comparing himself with the great composer Haydn, he replied, "With men who do not believe in me because I am not famous, I cannot associate." Ten years later he wrote to a prince, one of his kindest

benefactors : " What you are, you are through accident of birth ; what I am, I am through my own efforts. There are princes and there will be thousands of princes more, but there is only one Beethoven."

Beethoven was of Dutch descent and he was born at Bonn on the Rhine in 1770. His father was a third-rate musician and a drunkard ; his mother was the daughter of the head cook to the Elector of Cologne. His boyhood was spent in great poverty, and he had little regular teaching in music or in anything else. His childhood was unhappy, and he was an ugly, clumsy boy. With his dark, tousled hair, red pock-marked face, stumpy figure and small fiery eyes, he was not at all a romantic hero.

When only thirteen, he was made assistant organist at the Court of Bonn, and in the friendly atmosphere there, he began to pick up the scraps of knowledge about music that he gradually developed for himself. He became quite well known for the clever way in which he improvised on the piano. When he visited Vienna in 1787, he managed to impress another master of music, Mozart. By this time he was regarded as a promising young man, and in 1792, when the French Revolution was at its height, Beethoven was sent to Vienna to study under Haydn. Although this was intended to be only a short visit, it lasted for the rest of his life. Shortly after he arrived in Vienna his father died, and a little later his patron, the Elector of Cologne, was chased out of Bonn by the French. Beethoven made his home in Vienna, and henceforth he had to rely entirely on what he earned.

Vienna was then and for long afterwards the musical centre of Europe. Mozart and Haydn had made it a place of pilgrimage, and the grace and deli-

cacy of their music perfectly fitted the gaiety and charm of the Viennese. Into this atmosphere of light-heartedness with its delicate sprightly music, came Beethoven, coarse, clumsy and ill-mannered. It seemed unlikely that he would make a great success of his career, for he was quick to take offence, tactless and uneducated. His skill as a pianist made an impression, but his touch was heavy, and his playing full of emotion, which was a great contrast with the clear, light, correct performances of the famous pianists who came before him.

But in spite of all these handicaps, Beethoven made his way to the top. He was helped by friends who believed in his genius. He was soon playing in all the famous houses in Vienna, and making a fair income. He also began, very slowly, to try his hand at musical composition, and by the year 1800 it had begun to dawn upon Vienna, and even upon a wider circle, that here was music grander than they had heard before. It was difficult, obscure, rugged, but it made the piano seem a new and more powerful instrument, and it revealed the wonders that can be worked by a fuller and more varied orchestra.

For ten years, from 1799 to 1809, Beethoven passed through his most fertile period. His opera *Fidelio*, five great symphonies, concertos for piano and violin, piano sonatas which have never been approached for majesty, quartets and other arrangements for string instruments—all make these years glorious in the history of music.

The great man is the man whose genius makes a universal appeal. Music is a universal language because it can be enjoyed by everyone. Some music, however, seems to reflect the age in which it was written. The gay, polished music of Mozart

expresses the elegance of the eighteenth century; much modern music shows that it has been written in an age of speed, change, and unrest. But there is nothing in Beethoven's music to connect him with any age or place.

Somehow or other this uncouth, unlettered, and unhappy young German found that in music he could express all the emotions of human nature. He wrote sonatas so full of feeling and power that only few pianists have been able adequately to interpret them. Through his symphonies, he created the modern orchestra. In his chamber music, he reached heights of beauty never surpassed before or since. We know that a Beethoven popular concert will always be crowded. The force behind his works thrills the hearer as no subtlety will do.

In 1803 the French were advancing on Vienna. Beethoven, who was a Republican, and an admirer of Napoleon in his early days, dedicated to him, it is said, his Third Symphony called the *Eroica*. But when he learned of Napoleon's coronation as Emperor, he cried in a fury, "He is only an ordinary man," and tore off the dedication, writing instead, "To celebrate the memory of a great man."

By this time a great tragedy had overtaken Beethoven, a tragedy which had, fortunately for the world, forced him to give up his career as a pianist and devote himself to musical composition. He had become deaf. This most terrible affliction for a musician, which attacked him when he was only thirty, made him unhappy, bitter and lonely. He, whose whole life was wrapped up in the beauty of sound, was gradually shut out from all communication with the world by sound. He prophesied "I will wage war with destiny," but it was only by hard

and unceasing work that he could do so. He suffered poverty, illness, disappointment in his friends and the desperate loneliness of deafness.

In spite of all this, his energy forced him in the end to greater and yet greater heights of expression in music. From 1812 to 1818 Beethoven wrote little and was constantly ill and very much alone. He lived in poor circumstances and cared very little about order or decency in his life. He neglected his appearance so much that he was once arrested as a tramp. His rooms would be littered with clothes and books, himself unshaved and perhaps dressed in a goat's hair jacket and trousers. "Books and music would be scattered in all the corners; in one place the remains of a cold snack, in another a wine bottle, on the desk a hasty sketch of a new quartet, near it the fragments of a breakfast, on the piano some scrawled pages containing a glorious symphony in embryo . . ."

There is little that is attractive about Beethoven's private life. He had many troubles and some of them were of his own making, for he was inclined to be hot-tempered, selfish and quarrelsome. He is one of those strange people whose art seems quite separate from their everyday life. Whatever we may think of Beethoven's character—even if we judge him to be greedy, irritable and even stupid—we know that in his music he passed far beyond the defects of his own character, far beyond the sordid conditions under which he lived. Somehow he managed to turn his own poor experience of life into music which will live for ever.

By 1819 Beethoven's deafness was so bad that he had to start his "Conversation Books," in which all his talks with his friends had to be written down. But he found that he could work again. During the next

three years he wrote some of his finest works, the *Hammerklavier Sonata*, the *Mass in D*, the *Choral Symphony*, and the last quartets, and yet all the time he was living in a state of misery, depression and squalor.

In 1822 he insisted on conducting a performance of *Fidelio*. Owing to his deafness he could not hear the orchestra or singers, and there was confusion. He noticed nothing until a friend handed him a note : "Please do not go on : I will explain later." Beethoven left the theatre and going to his house and throwing himself down on a sofa, covered his face with his hands in complete despair. Two years later when conducting the *Choral Symphony*, he could not hear the tumultuous applause until one of the singers turned him round to face the audience so that he could see his triumph for himself.

This most famous of all makers of music died in 1826 after a neglected chill. "Applaud, friends," he said, "the comedy is ended," and he passed away in the midst of a violent thunderstorm.



III

ROBERT OWEN (1771-1858) PIONEER OF REFORM AND "PLANNING" THE INDUSTRIAL REVOLUTION

I

THERE are some men who owe their greatness not to anything they achieve, nor, indeed, to any special force of character, but to the fact that they were prophets.

The early nineteenth century was a great time for prophets and pioneers.

I will not cease from mental fight,
Nor shall my sword sleep in my hand,
Till we have built Jerusalem,
In England's green and pleasant land.

So sang William Blake in 1804, and it was just at that time that a small body of men, possessed of common-sense, energy and a love of their fellows, were giving

their minds to sweeping away some of the evil conditions under which the poorer people lived. Three of these pioneers were men who had neither wealth nor education to help them when they started their fight for a better England. They were William Cobbett, the farmer's boy ; Francis Place, the tailor ; and Robert Owen, the draper's assistant.

William Cobbett worked hard for the reform of Parliament. Francis Place fought for the repeal of the Combination Laws which prevented men from combining in Trade Unions, and he helped to draw up the People's Charter. Robert Owen was a man whose ideas had a great influence on his own time and have borne fruit in much of the social reform of recent years. He was one of those who really did want to "build Jerusalem in England's green and pleasant land."

Robert Owen was born at Newtown, Montgomeryshire, in 1771, just about the time when the Industrial Revolution was beginning to change the face of England. His father was a saddler and ironmonger and local postmaster, and Robert, the sixth of seven children, went at a very early age to the village school. Here he seems to have been a favourite of the schoolmaster, and he evidently soon learnt all that his friend was able to teach him, for at the age of seven he became "assistant usher" and helped to teach the other pupils the scraps of reading, writing and arithmetic which were all that was then thought necessary. Robert Owen did this for two years, and probably enjoyed playing at being teacher. He read all the books that were lent him—*Robinson Crusoe*, *Pilgrim's Progress*, *Paradise Lost*, and others.

At the age of ten he asked to be sent to London, and after a short stay there with his brother, he became

a draper's assistant at Stamford in Lincolnshire. He soon got to know through his customers something about human nature as well as about the different kinds of dress materials. When he was fifteen he took another place as an assistant in a shop on Old London Bridge. Here he had to work very hard for twenty-five pounds a year and his board and lodging. He had to breakfast, have his hair powdered and curled by the hairdresser, dress and be in the shop by 8 a.m. Dinner and tea were very hastily swallowed, and work went on till 10.0 or 10.30 p.m., and often it was much later before the shop was tidy and put in order for the next day.

Owen's next job was in Manchester where he earned forty pounds a year with board and lodging. The cotton trade was then beginning to forge ahead, and anybody with intelligence and enthusiasm had a chance to make good in Manchester. A young mechanic started talking to Owen about the curious new machines which were everywhere being set up, and which he felt sure would be easy to make and work. Owen was always game for an adventure. He threw up his job, borrowed a hundred pounds from his brother, and although he was only eighteen he went into the cotton-spinning business with a partner. Young as he was, he kept the books and successfully managed a staff of forty men, but after a year or two he sold his share in the business and started experimenting on his own with the manufacture of fine cotton yarn.

So by the age of twenty, Owen had had a very full and exciting life. He had great confidence in himself, and it was not surprising that when a rich manufacturer, named Drinkwater, wanted a manager for a new mill employing five hundred workers, Owen

applied for the post. All the pictures we have of Robert Owen show him to have been plain and unattractive in appearance. But he must have had a very winning way with him. Later in life, he often talked too much and was rather a bore, but he was admired and loved by all who met him. Probably he talked a great deal to Mr. Drinkwater and to very good purpose, for although he was the youngest applicant and asked for a higher salary than any of the others, he got the job, and at the age of twenty years he was put in charge of a large new mill.

Owen knew very little about the machinery in it, and his employer knew nothing. Owen himself tells us how for six weeks he held his tongue, inspecting and watching all the processes, answering only "yes" or "no" to questions, and giving no orders. At the end of that time, he felt that he was master of the situation and was ready to give directions in every department. In a short time he was able to improve the quality of the yarn turned out, and also to improve working conditions for the men and women employed under him.

It was while working at the Manchester mill that Owen thought out some of the ideas which he was able to test more carefully later on. He insisted on a truth which many employers only came to realize much later, that the "living" machinery was just as important and needed just as careful attention as the "dead" machinery. He believed that to look after the workpeople's well-being was not only right but profitable. "If," he said, "you get better results by attending to the condition of your machinery, what may not be expected if you devote equal attention to your vital machines, which are much more wonderfully constructed?"

Another idea of Owen's which was to influence all his work was that people's characters are not born in them, but are made by their surroundings and the way in which they are treated. To make a man a better workman, you must improve the conditions under which he works. If he is treated properly, he will behave properly. He did not allow for heredity, which some think is a very strong force. At the time when he lived, workmen were too often treated merely as "hands" and forced to work under cruel and unhealthy conditions. There were plenty of employers like Mr. Gradgrind in Dickens's *Hard Times*, who believed that the factory workers were all bad and lazy and that the only way to improve them was to punish and fine them. Owen was exactly the opposite kind of employer, and the interesting thing about his career is that with all his unusual ideas he was very successful and made business pay. His ideas about the effect on the workpeople of good surroundings and fair wages had a great influence on such men as Lord Shaftesbury, Charles Dickens, John Ruskin and others who tried to make the factory system more humane.

Owen became very anxious to put his views into practice in his own factory. He was fortunate in being able to do this when he was only twenty-eight, for he married a Miss Dale whose father owned the New Lanark Mills on the Clyde. With two partners he bought the mills from his father-in-law and started one of the most interesting experiments in the whole history of industry—which attracted the attention of some of the revolutionary thinkers of Czarist Russia.

Before we look at Owen's thirty years at New Lanark, we must imagine what factory life was like

in the early years of the Industrial Revolution. Under the system of *laissez faire* ("go as you please") which the Government and most employers believed at the time to be the best, the manufacturers were given an entirely free hand. They could build their factories how and where they liked. They could employ whom they liked and at whatever wages they liked. As most factory work was simple and required very little strength or skill, large numbers of women and children were employed. When most of the mills were worked by water-power and were built in remote districts far from the towns, batches of pauper children from the workhouses were sent to the employers, who fed and clothed them but paid them little or nothing and often worked them for as long as sixteen hours a day. In 1802 the first Factory Act was passed which limited the hours of these children to twelve and forbade night work, but there was nobody to see that the law was observed, and it was almost a dead letter.

The condition of most children working in factories until the Factory Act of 1833 was appalling. Little children worked fourteen or fifteen hours a day for as little as a penny a day. They were overworked and beaten and unhealthy. Lord Shaftesbury once said of the children who in the evening came out of the factory gates, "They seemed to me, such were their crooked shapes, like a mass of crooked alphabets." At that time at least half the children between six and fourteen had had no education at all. In some country districts there was often little or no provision for education, and the factory children had neither time nor strength for lessons or for play.

Robert Owen took over the management of the New Lanark Mills on January 1st 1800, when we

were at war with Napoleon. The very first day of a new century must have been an exciting day for everyone, but no one can have felt more excited about it than this young man, setting out on his life's great adventure, full of ideas and ambitions. Owen found New Lanark in a bad state. The mills stood in a clearing amid beautifully wooded surroundings near the falls of the Clyde. The colony, far from any large town, consisted of about 1300 workmen and their families, and between four and five hundred pauper children. Owen says he found the men drunken and dishonest, the children overworked and completely ignorant. He determined to make New Lanark a model colony—a place where good work was turned out under happy conditions, and to which factory owners everywhere could look and say, "See how it pays to treat your workmen well."

Owen made many reforms at New Lanark. He held firmly to his idea that crimes and faults of character were due to bad housing, poor food, and overwork, which could be remedied. He opened shops where the workpeople could buy good food cheaply and so improve their health. He built better houses and streets, he saw that the mills were clean and well-aired, and he paid higher wages than other factory owners. By making it possible for the people to live happier and healthier lives, and by seeing that the children worked shorter hours and had more leisure, Owen got better work done and made a great success of the mills. He was able to buy out his partners, and even so, he remained a very rich man.

Owen was a real pioneer of factory reform. His policy of high wages, shorter hours, clean well-aired buildings, up-to-date machinery, and co-operation between employers and workers is the policy of all

progressive manufacturers to-day. But in his day Owen stood alone.

In the year of Waterloo (1815), Owen called a meeting of Scottish factory owners to try to secure a Factory Act to improve the condition of the children in the mills. He worked very hard, but there was so much hostility and bad feeling that the Bill, which became an Act in 1819, was very disappointing. It applied to cotton mills only, forbade the employment of children under nine, and fixed a limit of twelve hours a day (excluding meal times) for children of sixteen or less. But there was no provision for education, and no steps were taken to see that the law was observed. Nevertheless it was a halting step in the right direction, and without Owen's enthusiasm it might have been long delayed. There is no doubt that by bringing the whole of his kindly and pitying mind to bear on the problems of the factory, Owen greatly influenced not only the Children's Charter of Lord Shaftesbury and other factory reformers, but also the model factory villages of our own day.

II

But Robert Owen was not only a factory reformer. He was also a pioneer of education. After his first eight years at New Lanark, he began to pay special attention to the children. Although he believed that by proper treatment bad men could be turned into good ones, he realized how much easier it is to teach a child than an adult. A friend said of him that "if he had seven thousand children instead of seven he would love them all devotedly." He had not enjoyed a good education himself, but he was a generous helper in the work of Lancaster and Bell, the famous founders of schools for the poor.

He determined that his own school should be the best in existence. He persuaded parents not to let their children begin work in the mills too young, and in 1816 he built a school at New Lanark where young children from the age of two could go, and where the children who were working in the factory could attend evening classes. There were no punishments and no rewards in this school. The children were not "annoyed by books," but learnt by means of conversation, maps, pictures and charts hung in the classroom. They wore a white uniform which was changed three times a week. They had a great deal of music, drill and dancing, and the smallest ones had games and toys to play with. The infant school, which was also a kind of crèche, allowed mothers who were working in the factory to shut up their homes without fear for their little ones. "They appeared perfectly happy," wrote one visitor, "and as we entered, the little creatures ran in groups to seize their benefactor by the hand, or to pull him by the coat, with the most artless simplicity."

When we remember how early in the century this was happening, it is a very remarkable tribute to Owen. It was the age of dame schools such as the one described in Kingsley's *Water Babies*, and of the "monitorial" schools where most of the teaching was done by the older children (monitors) repeating the lessons to the younger. The few factory schools were very bad. Even in 1850 an inspector wrote of one of them: "The utter incapacity of the teacher; the small, crowded room; the scarcity of books and the tattered and dirty condition of those they have; the noise and the close and tainted atmosphere—these things render a visit to such mock schools a most painful duty."

The first kindergarten (that is, "children's garden") was not opened by Froebel, the German educational reformer, until 1837. It is a wonderful thing that Robert Owen, the saddler's son, who hardly ever read a book, and who knew very little of the world, should have created in 1816 a school which was a model for later generations—the first real infant school, and one where the children were described by a visitor as being "superior in point of conduct and character to all the children and youth I have ever seen." It was not surprising that from all over England, and from abroad too, people flocked to see Owen's model factory and school. One very interested visitor was Queen Victoria's father, the Duke of Kent.

Having been so successful at New Lanark, Owen believed he had a special recipe for happiness which would bring the "millenium" or Golden Age to the whole world. He gradually became less interested in the practical side of his work and more absorbed in ideas and theories. It is during the years of his life from 1820 onwards that Owen became a pioneer of other great movements, the Co-operative movement, the movement for dealing with Unemployment, and the Socialist movement. He gradually handed over to others his interests in New Lanark, and began to air his views about rearranging society on a new basis.

Owen was one of the first to start Co-operative Stores. He believed that co-operation was a far better plan for industry than competition. He held that the profit made when goods were sold should go not into the pocket of one man or one company but towards the education and recreation of the people of the town or district. His "Plan" for curing Unemployment aimed at settling the unemployed in

self-sufficing communities of about 500-1000, and he described in detail the buildings and services which each of these colonies would need. But he was no accountant, and he had not worked out carefully the enormous cost involved. Although his schemes were very unpractical at the time, quite a number of his suggestions were carried out in the camps and colonies for the unemployed set up in later years in connexion with "distressed areas."

This idea of small, self-sufficing colonies, which he grew used to at New Lanark, became the most persistent bee in Owen's bonnet. He is often described as one of the first Socialists. He believed that people would be better off and happier if they all worked for the common good. Owen took a great deal of trouble to get his ideas accepted. He reported to Parliament, he gave lectures, and spoke at meetings so crowded that several ladies fainted.

At last in 1824 he had the opportunity to found his own colony which held its property in common and worked for the common good—a kind of "Communism." He bought land and property in America and took over a party of settlers who founded the colony called New Harmony. Here about nine hundred people lived according to Owen's ideas, working according to their ability, and receiving food, clothing and shelter according to their needs. New Harmony lasted as a colony for four years. It cost Owen forty thousand pounds. It was a failure. The odd collection of people who went there could not live together contentedly. They quarrelled and argued and refused to carry out Owen's principles. Owen failed to allow for the fact that most people prefer living independent lives to living in a place where everything is arranged for them. People called Owen's plan a "nursery" and a

"barracks." "Mr. Owen conceives," wrote one critic, "that all human beings are so many plants which require to be reset. He accordingly proceeds to drill them into squares." One newspaper advised him to "let the Poor alone. The working bee can always find a hive."

By this time people had forgotten the great things which "Mad" Robert Owen had done at New Lanark, and they no longer paid much attention to a rather long-winded and boring old man. But his influence on wage-earners grew stronger as he grew older, and some of his ideas bore fruit in the growth of Co-operative Societies, and in the social reforms which followed the passing of the first Reform of Parliament Act of 1832. He published a journal called the *New Moral World*, and until his death in 1858 he never ceased to spread his own special message—that human nature was essentially good, and that by creating the right kind of surroundings man would reach his full powers and give the best that was in him.

There are many doubtful points about Owen's ideas. He was a prophet, rather an unpractical and tiresome one, but one who saw far beyond the needs of his own day. In everything that he touched, in his great experiment of factory reform at New Lanark, in education, in co-operation, in the care of the unemployed, in the ideas behind socialism, he sowed the seeds of future progress.

In Soviet Russia to-day, and in parts of China, we can see more advanced "Owenism" at work in the communal factories and collective farms. There is also something of Owen's influence in the stress which is laid by present-day social reformers on "planning," working out schemes which can gradually be realized over a period of years, instead of the

laissez faire, or "go-as-you-please" way of doing or not doing things, so fashionable in the nineteenth century. And there are some who would claim him as "the first intelligent capitalist."

Robert Owen is perhaps an unromantic figure. He was sometimes wrong-headed, obstinate, unpractical, and, as one of his biographers says, "so dazzled by the splendour of his aims" that he was not always able to work out sensibly the means of achieving them. But he raised the hopes and ideals of his disciples above those of their fellows, and he fathered some of the most adventurous experiments in the social history of mankind.



IV

GEORGE STEPHENSON (1781-1848)

PIONEER OF RAILWAYS

I

THERE are many great engineers whose names we should not recognize. Men who build bridges, design great ships and aeroplanes, who make railways and wireless stations, are often forgotten. They are content to live in their works. A few names stand out—Brunel, Daimler, Marconi, Ford, De Havilland and others. But pride of place among engineers is often given to George Stephenson, a man of humble birth, whose vision and perseverance changed the face of continents.

George Stephenson was born at a little place called Wylam-on-Tyne near Newcastle. His father was a fireman at a colliery and earned twelve shillings a week. On this wage he had to support a wife and six children. They lived in one room of a cottage. It

is little wonder that the boys were expected to go out to work as soon as they were able to earn a small sum. George, the second boy, earned his first wages when he was a very little chap. He worked as a cowherd for a neighbour and was paid twopence a day. A little later he became a farm boy at fourpence a day and would trudge off at dawn to hoe turnips or help the ploughman.

But as so often happens in mining districts George wanted to work in the pit, and soon he was employed as a "picker," picking the stones and rubbish from the coal. At fourteen he was very proud, for he was made assistant fireman to his father at one shilling a day; and when his wages were increased to twelve shillings a week, "now," said he, "now I am made for life." The family was now better off, for four sons were working, but the joint wages were little enough, and in spite of several moves they still lived in one room.

George Stephenson was a great lover of nature and especially of birds, for he was gentle and patient with them. But he had another great love. Like many other boys George had always been fascinated by engines, especially the one which worked in the colliery, and when he started helping his father he began to learn about its mechanism. Engines at that time were not "locomotive," they did not travel from one place to another. They were "stationary" engines and were used to bring coal up the shaft. When George was seventeen a very exciting thing happened. He was made the "engine man" at a new pit, and he had his father as his fireman.

George Stephenson was now able to watch his engine the whole day long and to notice its bad and good points. He took great care of it and was always thinking out ways of improving it. But he was bothered

by one thing. Many people had described engines, and written about them in books, but he had never been to school and could not read or write. So he began to attend a "night school" on three evenings a week after his hard day's work was over. For fourpence a week he learned to read and write and to do arithmetic. The master would set sums on a slate which George would work out the next day when he had any spare time at the colliery. One of his friends "could not make out how George got on so fast ; he took to figures so wonderful."

Still young Stephenson's chief interest was in engines, and he was very pleased when at the early age of twenty he was made brakesman in charge of the engine which drew up coal from the pit, at a wage of nearly a pound a week. Whilst working as brakesman, Stephenson married, and for three years was very happy in his cottage room. But two tragic blows fell which made him forget all his success. His young wife died, and his old father was blinded by a terrible accident in the colliery.

The early years of the nineteenth century, during the war against Napoleon, were very hard years for the poor. Wages were low, taxes were high, and food was scarce and dear. It was not easy for Stephenson to support his old parents out of his earnings, but he did, and he also had to pay a considerable sum to a substitute who would serve in the militia instead of him. He earned a little extra money by mending clocks and watches in the evening, and by making shoes and clothes for the miners. He had one great joy in life in his little son Robert. They worked and experimented together and were interested in the same kind of things, and in the end Robert became almost as famous an engineer as his father. Fortunately,

too, George Stephenson married again and was very happy in his family life.

Taking clocks and watches to pieces was only one sign of Stephenson's desire to see how things worked and why they went wrong. Once in his early years at Killingworth pit, a pumping engine refused to work for a whole year. One of George's mates asked whether he thought he could "doctor her." George thought he could and he was given the chance. In less than two days he had taken the engine to pieces, altered and repaired it, and started it working perfectly. For this he was given a good job as engine man in the Killingworth colliery.

In his early days Stephenson was well known among the miners, not for his skill with engines but for his invention of the "Geordy" safety-lamp, as they called it. This lamp, which protected the miners against the dangers of fire-damp, was invented before Sir Humphry Davy invented his famous lamp. Although Davy received a large reward for his invention and Stephenson a very small one, a public subscription was arranged and Stephenson was presented with a thousand pounds, which he used later to help in building his factory. He also received a silver watch bought with the pennies of the miners whose lives were the safer for his invention.

Stephenson now began to think about making locomotive engines. There were many railroads leading from the collieries to the rivers or canals, but the coal wagons were drawn along the railroads by horses. The whole system of transport was so slow that the position was serious. Coal lay in hundreds of tons at the pithead waiting to be moved. People in towns had often to wait a long time for coal or do without it.

At last, in 1800, a Cornishman, named Richard Trevithick, managed to build a kind of steam-engine, which he ran on the ordinary roads. One of his engines was bought by a Newcastle pit-owner, but when it was tried on the rails it burst, and its successor worked so badly and went so slowly that the workmen called it a perfect plague. But although Trevithick's engines seemed to be more of a hindrance than help, people flocked to look at them, ugly monsters, snorting along the rails, breathing out smoke and fire. One of the most interested spectators was George Stephenson. Luckily, Lord Ravensworth, who owned Killingworth colliery, had great faith in Stephenson and lent him money. With the help of some of the colliery workmen, Stephenson built an engine which he called "My Lord." It drew a good weight uphill at four miles an hour, and it proved very strong and lasted for many years, but it was costly to build and very slow, so that it did not pay to use it except as a curiosity.

II

The name of Stephenson had now begun to be connected with railways and engines, and fortunately there were one or two men in England who had imagination and energy and could "look a hundred years ahead." One of these men was a Quaker, Edward Pease. He was the moving spirit of a company which wanted to build a railway between Stockton and Darlington, so that the coal which was mined round Darlington could be got more quickly to the coast. One evening a shy, rather awkward workman, "only the engine-wright" at Killingworth, called to see Mr. Pease. He urged that this railroad should be a good one, and that locomotives should be

used instead of horse-drawn trucks. The visitor was, of course, George Stephenson, and he asked Mr. Pease, before he turned down the idea of moving engines, to go over to Killingworth and see the "Puffing Billy" he had made. Mr. Pease went, and not only did the sight of "Puffing Billy" fill him with enthusiasm, but he made Stephenson the engineer of the new railway at three hundred pounds a year.

From that moment in 1823 George Stephenson was a made man. This self-educated workman, with his thoroughness and sound common-sense, made a tremendous success of a very difficult job. Dressed in a blue tail-coat, top boots and breeches, he supervised his assistants in surveying the route of the railway. Mr. Pease helped him to set up a factory in Newcastle for building engines, and this made him employer and factory-owner as well as a designer and craftsman. When the line was opened in 1825, George Stephenson himself drove the first train. It consisted of twelve wagons of coal, a special coach for the directors of the line, and twenty-one wagons packed full of passengers. For part of the twelve-mile journey, the train actually went at twelve miles an hour, an unheard-of rate. The Stockton-Darlington line was a great success, and Stephenson built many engines for it in his Newcastle factory. One of his engines raced a stage-coach and beat it, and as the prize of victory this engine still rests in state at Darlington station.

It must not be thought, however, that it was all plain sailing for Stephenson and for the people who believed in railways. Like all new inventions, the locomotive had to face much ridicule and opposition, but George Stephenson never lacked courage and patience in the face of opposition.

One of the busiest parts of England from the beginning of the nineteenth century was Lancashire, due to the growth of the cotton trade. It was very important to have a railway between Liverpool and Manchester, so that the raw cotton arriving at Liverpool by sea could easily be taken to the factories at Manchester and other towns. It was said that it often took longer to convey the cotton this short distance than to ship it across the Atlantic. At last it was agreed to survey this part of the country for a railway.

But the people of the countryside were so terrified at the idea of trains and railways that they gave the poor surveyors a dreadful time. They pelted them with stones, barred their way, and destroyed their instruments. Some of the big landowners, who ought to have known better, were not always any more sensible. They tried all they could to prevent the railway passing over their lands. They were told the smoke would kill their pheasants, and that they would be ruined because their oats and hay would no longer be needed for horses. Many of the newspapers were full of fears and made great fun of the stupid people who thought that any engine could travel safely at more than ten miles an hour!

In the end permission was given by Parliament to build the Liverpool-Manchester railway, and George Stephenson was made chief engineer at a salary of a thousand pounds a year. It was a very difficult line to build, because not only did it pass through rocks and valleys and over roads and streams, but across a treacherous bog called Chat Moss which stretched for four miles.

In spite of Stephenson's success with the Stockton line, it was a long time before the directors decided to

use locomotives instead of horse-drawn wagons on the Liverpool-Manchester railway. There was so much feeling against locomotives that Stephenson's arguments were very nearly in vain. In the end, however, the directors decided to offer a prize of five hundred pounds for the best engine that would fulfil all their conditions. It must be able to draw a weight of twenty tons at ten miles an hour, it must not cost more than five hundred and fifty pounds, and it must be ready by October 1st 1829.

George Stephenson and his son made a great many experiments before they produced their famous engine, the "Rocket." When the day of the competition arrived, only four engines were ready. At Rainhill, near Liverpool, crowds of people gathered to see the sight, engineers, manufacturers, fashionable ladies, and other sightseers. None of the other three engines was very satisfactory, and the "Rocket" was an easy winner. It made many journeys over the two-mile course without a break-down and at speeds up to thirty-five miles an hour. Although it looks to us now, as it stands in the London Science Museum, a very clumsy and odd-looking machine with its tall thin funnel and its wheels, small in front and large behind, the "Rocket" was a masterpiece of careful invention and sound workmanship. It lasted for many years and is a tribute to the genius of its inventor. On New Year's Day, 1830, the "Rocket" drew the first passenger train across Chat Moss.

When the Liverpool-Manchester Railway was opened, eight of Stephenson's engines were running on the line. Unfortunately the pride and pleasure of Stephenson and his son were marred by the tragic accident in which the statesman Huskisson was run over by the "Rocket" and killed. However, as

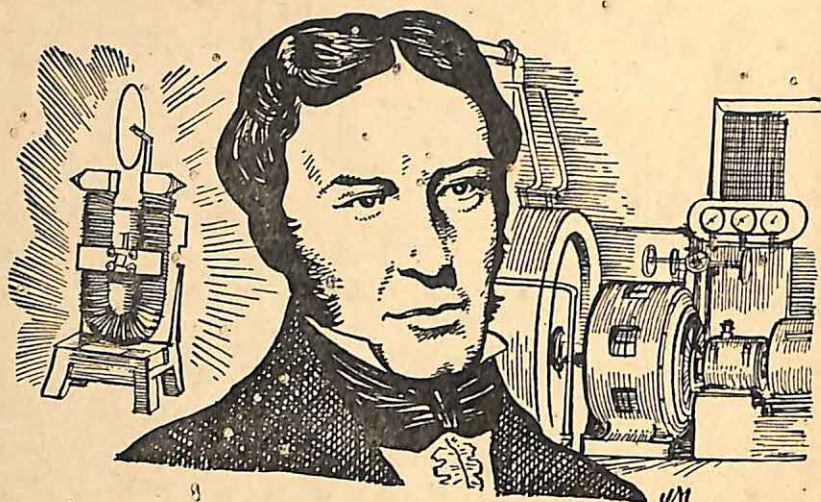
Stephenson had foreseen, the railway was a great success, and soon twelve hundred passengers a day were being carried.

The Liverpool-Manchester line was the beginning of the net-work of railways that now began to spread all over Britain, and in due course all over the world. Stephenson was surveyor and engineer for many of these, and for the remainder of his life he was a very prosperous and successful man. He himself, the simple, untutored workman, became the wizard whose magic wand changed the whole face of England, and in due course of Europe and the world. Some years after the building of the "Rocket", Stephenson went to Belgium to consult with King Leopold about the construction of railway lines. He was the guest at a public dinner, where he was greeted as the greatest engineer of the day.

But Stephenson was more than that. He was an engineer of genius, but he was also a man of vision. He was not afraid of the results of his work. He prophesied success in the face of opposition and derision. "Now, lads," he said to his mates at Stockton, "I venture to tell you that I think you will live to see the day when railways will supersede all other methods of conveyance in the country, when railroads will become the great highways for the King and all his subjects. The time is coming when it will be cheaper for a working-man to travel on a railway than to walk on foot. I only wish I may live to see the day, though that I can scarcely hope for." Those were brave words in 1825.

If Stephenson were living to-day, he would probably be able to see more clearly than most people the future of railways and roads in this country. He might have made a very good Minister of Transport.

Stephenson made very few mistakes. His ideas were as sound as his workmanship. Unlike many inventors he won success and recognition. But one feels that had Stephenson failed, he would have been just as great a man. He would never have lost faith, never have lacked that steady courage which always served him so well. Although he died a rich and prosperous man at sixty-seven, he remained the simple, shrewd Northumbrian worker. He refused a knighthood, and when asked what letters should be put after his name he replied, "I have to state that I have no flourishes to my name, either before or after ; and I think it will be as well if you merely say 'George Stephenson.' "



V

MICHAEL FARADAY (1791-1867)

PIONEER OF ELECTRICAL SCIENCE

ONE day Napoleon drove through Paris after his disastrous retreat from Moscow. "He was sitting in one corner of his carriage, covered and almost hidden from sight by an enormous robe of ermine, and his face overshadowed by a tremendous plume of feathers that descended from a velvet hat. The distance was too great to distinguish the features well, but he seemed of a dark countenance and somewhat corpulent." This is the description given by a young Englishman in the crowd, who was travelling in France in the year 1813. The Emperor was very near his downfall. His day was over and he had begun to suffer defeat. The young Englishman was at the threshold of his triumphs. The life that was before him was to be more useful to his fellow-men than Napoleon's had been. His name was Michael Faraday.

Michael Faraday was born in 1791, and like many

great men he had humble parents. His father was a blacksmith who died when Michael was nineteen. The family lived in a very poor street near Manchester Square, London, and Michael and his brother Robert went to a little "dame school." England was at war with Napoleon, and it was a hard time for the poor, who often had not enough bread to eat. There must have been something in the Faradays which made them interested in science, and keen to try new ideas, for directly the new gas lighting began to be used Robert Faraday became a gas fitter. To help his parents Michael Faraday went to work as an errand boy at a bookseller's shop, where he had to deliver newspapers to the customers in the morning and sometimes collect them again for other people to read. Newspapers were then so expensive that two or three people would often share the same paper.

Michael was such a good errand boy that his master decided to apprentice him to the bookbinding trade. At fourteen Michael was the "industrious apprentice." It was well for him and for us too that the trade he learnt was bookbinding, for while he bound the books he often found time to read them, and it was in this way that he discovered how much he enjoyed books about science, especially those which dealt with chemistry and electricity. Michael Faraday himself said of these years, "Whilst an apprentice, I loved to read the scientific books which were under my hands . . . I made such simple experiments in chemistry as could be defrayed in their expense by a few pence per week, and also constructed an electrical machine, first with a glass phial, and afterwards with a real cylinder, as well as other electrical apparatus of a corresponding kind." His employer tells how his apprentice used to go for early morning walks,

"visiting always some works of art or searching for some mineral or vegetable curiosity."

When Faraday was twenty-one he began to work as a journeyman bookbinder, but he did not like his new master, and by this time he had a great longing to leave this trade and map out some path for himself in science. Not long before, he was fortunate enough to attend four lectures on chemistry by Sir Humphry Davy, a brilliant lecturer at the newly founded Royal Institution in London. Faraday now had the excellent idea of sending to Davy the careful notes he had taken of these lectures, "together with a letter saying how much he hoped for an opportunity to do some sort of scientific work.

Sir Humphry Davy evidently thought his correspondent must be an interesting young man, for he arranged to have a talk with him and pointed out to him how difficult and badly paid a scientific career was likely to be. But young Faraday was quite unmoved and a little later the chance he so longed for came his way. Davy had not forgotten his eager visitor and arranged for him to be offered a job as a laboratory assistant at the Royal Institution.

Faraday, of course, jumped at the offer, although the salary was only twenty-five shillings a week. He moved into rooms at the top of the Royal Institution. In the services of the Institution he was to spend the rest of his life—over fifty years. Very few great men have lived so stationary an existence as Faraday. Although his work and his ideas were adventurous and revolutionary, his own life was uneventful.

The Royal Institution had been founded in 1797 to spread the knowledge of "useful mechanical inventions and improvements" and by lectures and experi-

ments to apply science to the "common purposes of life." Sir Humphry Davy was the first lecturer in chemistry, and afterwards Professor and Director of the Laboratory. Faraday, from being the industrious bookbinder quickly became the perfect laboratory assistant. He had to keep the laboratory and apparatus clean and to prepare the apparatus required by the lecturers for their experiments. He found, of course, many opportunities of watching and listening to good lectures and experiments. But the most valuable experience came in his early days when he went on a tour of Europe as secretary and assistant to Davy. They met many scientists whose work is now world-famous; for example, Monsieur Ampère in Paris and Count Volta of Milan, important names in the history of electricity.

This tour took place during the Napoleonic Wars, but the travellers had evidently no difficulty in moving about even in an enemy country. They were looked upon not as enemies or as allies, but as fellow-scientists. Faraday heard of Napoleon's escape from Elba, and he noted in his diary, "Being no politician, I did not trouble myself much about it, though I suppose it will have a strong influence on the affairs of Europe."

The next fifty years of Faraday's life, from 1815 to 1867, were the life of a scientist, a life of patient, persevering research, which has only reached its full fruits in our own time. In 1821 he married a girl named Sarah Barnard, and for forty-six years they lived happily together in their four rooms at the Royal Institution. This remained their home even when Faraday became very famous, and when people flocked to his lectures.

Faraday had many scientific interests. He was, of

course, greatly interested in chemistry, and among other things, he had helped Davy to find out more about the new element, iodine. But his chief interest was in magnetism and electricity, subjects which were only beginning to be explored. Faraday was one of the first scientists to experiment with the connexion between electricity and magnetism, and to find out, as any schoolboy or girl can now easily discover, what curious things happen to magnets when they are brought near an electric current.

The Austrian, Oersted, had discovered that a magnet, such as a compass needle, can be twisted in a new direction by an electric wire. Faraday went on to show that an electric wire can also be twisted by a magnet, and that even if you do without a magnet the wire can be revolved by the earth's magnetism alone. His brother-in-law describes how he exclaimed, "Do you see, do you see?" as the wire began to revolve in this experiment. "I shall never forget," he wrote, "the enthusiasm expressed in his face and the sparkling in his eyes."

Electro-magnetism was only one of the many problems Faraday worked at during the next ten years. He also did a great deal of research into the liquefaction of gases, and proved that many gases and liquids were only "states" of the same thing. While working on some of the problems of the new gas industry, he discovered benzene, a discovery of great importance for chemists of the future.

Faraday became Director of the Laboratory and Fellow of the Royal Society, and from 1825 onwards he was one of the most popular and brilliant lecturers on science there has ever been. He started special lectures for children which were very successful. "His voice was pleasant," says one who was there,

“his laugh was hearty, his manners when with young people, or when excited by success in the laboratory, were gay to boyishness.” He always showed his hearers the simplest experiment instead of just telling them about it, and this made his lectures very much more interesting and easier to remember.

In 1821 Faraday went back to his first love—electro-magnetism, and made the discovery for which he is chiefly famous, the dynamo. By a long series of very careful and patient experiments he proved that not only did electricity produce magnetism, but that magnetism could be made to produce electricity. This he proved by means of his “induction coil,” in which he managed to produce a continuous electric current, by moving it across the lines of force surrounding a magnet.

Up to this time electric currents had been produced in very small quantities. The Italian, Count Volta, had made them by primitive “wet” cells or batteries, consisting of piles of different metal coins with salt and damp rags between them. Now it was possible to make the first dynamo, a simple, economical machine which could produce an unlimited supply of electricity.

It is easy to see what a tremendous discovery the dynamo was. Every use to which we nowadays put electricity depends upon it, for it gives us lighting, power for heating and cooking, the spark which starts our motor-cars and aeroplanes and wireless sets, the motive power for electric trams and trains. On Faraday’s discoveries depend all the experiments of Edison, Marconi and the others who have brought us telephones and wireless. He was a pioneer. He would marvel at the electrical world we live in now, but it is certainly a world whose greatest marvels owe their origin to him.

Faraday made many more experiments in magnetism and its effect on metals and even on light itself. There is hardly a term in electricity or magnetism which does not remind us of his work—condenser, transformer, induction coil, direct or alternating current, and many others. He was child-like enough to be really excited over his experiments, and would often dance round the apparatus in a state of wild enthusiasm.

In later life Faraday became feeble and lost his memory. He spent his last years with his wife in a house at Hampton Court lent him by Queen Victoria. He had always led a good life, and as his scientific work progressed, so did his religious feeling. He spoke of every little particle of matter being a centre of force "reaching to an infinite distance, binding worlds and suns together," and went on to say that "our philosophy whilst it shows us these things should lead us to think of Him who hath wrought them."

In Faraday we have a rare and attractive combination, the man of genius and originality who yet possessed the wondering curiosity and simple faith of a child.





VI

JOSEPH GARIBALDI (1807-1882)

"BOLD BUCCANEER" AND ITALIAN PATRIOT

I

NOT much more than seventy years ago, London gave a great welcome to an Italian. Everybody turned out into the streets, and the carriage which bore this old peasant, dressed in a red shirt and a grey blanket, literally dropped to pieces from the weight of the thousands of welcoming and waving arms which had rested on it during the journey. This visitor was Joseph Garibaldi, a "soldier of fortune." But it was not because he was a soldier that the crowds cheered and the bus drivers waved their whips at him. It was because he had fought for Italy's freedom, and had endured every kind of danger and hardship for a noble cause.

Joseph Garibaldi was the son of the captain of a little trading ship. He was born in 1807 at Nice,

which then belonged to Italy. He loved the sea so much that when he was a schoolboy of fifteen, he got hold of a small boat and started to sail to Genoa to seek his fortune. His father fetched the truant back and let him have his way and learn to be a sailor. So for ten years, from cabin boy to captain, young Garibaldi lived a life of adventure and hardship on the sea, and only at the end of that time did he begin to be interested in what was happening in his native land of Italy.

Every history of Europe has a good deal to say about Italy's struggle to gain her liberty in the nineteenth century. England and France had achieved unity and grown up into nations towards the end of the Middle Ages; but Italy—and Germany—did not become united nations till four centuries later, towards the end of the nineteenth century, and this very late development has been one of the reasons for the world-wide wars of our own days.

The three men who most helped Italy to become a nation were Mazzini, the thinker—a disciple of English Liberalism—Cavour, the statesman, and Garibaldi, the soldier. "I have been accustomed from childhood to respect that country," said Cavour in 1859 of England, "as the one from which I have drawn most of the political ideas that have guided me in my career. I esteem and respect England, which I regard as one of the principal forces in the world; I venerate her because I regard her as the rock upon which liberty has found, and may perhaps still find, inviolable sanctuary."

Italy had been for centuries the prey of every kind of invader. Her one hope lay in the Kingdom of Sardinia (with Piedmont, Nice, etc.) where patriotism was beginning to make itself felt. Lombardy and Venetia were in the hands of the Austrians, and other

smaller states were under Austrian influence. The States of the Church were ruled by the Pope. Naples and Sicily had a corrupt Bourbon King, half French, half Spanish.

Garibaldi had a meeting with Mazzini, who was in exile in France. Mazzini was the life and soul of a movement called "Young Italy," which planned to throw off the Austrian tyranny and form one united nation. Garibaldi was greatly excited at the idea of working for his country's freedom, but although he started at once to join in Mazzini's plots, nothing came of it. Garibaldi, hounded out of his own country, sailed for South America where he spent the second ten years of his adventurous manhood.

Garibaldi landed in South America in 1836 and there he lived the life of a "bold buccaneer." He started trading in a small boat, but when the little state of Rio Grande rebelled against the big empire of Brazil, he joined the rebels. Gradually he became commander of a band of adventurers, pirates on the sea and raiders on the land. They underwent every kind of hardship and learnt many lessons of endurance and loyalty, and also the best way in which to carry on this guerrilla war. In South America Garibaldi married a brave Brazilian girl, Anita, who fought side by side with him and rode as fearlessly as his most experienced horsemen. Twelve days after their most experienced horsemen. Twelve days after their son was born, they had to escape with him on horseback over the desert, and three months later Garibaldi was riding with the baby slung from his neck by a handkerchief as he tried to warm him with his breath.

Garibaldi became very well known, not only in South America but in his own country. This was largely due to his part in forming and commanding the Italian Legion, a band of exiles who were ready to

fight for any patriotic cause in preparation for the day when they should be called upon to fight for Italy.

We are accustomed nowadays to hearing about Blackshirts and Brownshirts and shirts of other colours to distinguish different parties. The first to wear a shirt as a badge were the Garibaldians. A stock of red woollen shirts used by South American butchers in slaughter-houses was offered for sale cheaply, and they were used to clothe the Legion. This gave Garibaldi's followers the name of Redshirts.

In 1848, with his family and eighty-five men, Garibaldi returned to Italy, feeling that his life was only just beginning. "Our hearts," he said, "beat high with lofty enthusiasm." At first he was doomed to disappointment. Charles Albert, King of Sardinia, was involved in an unsuccessful attempt to free Lombardy from the Austrians, and Garibaldi, who offered his help, was no more fortunate. But somehow or other, in a very short and useless campaign, Garibaldi had managed to attract many people by his courage and enthusiasm. A general who visited him after the revolt, wrote, "When there is another war, he is a man to employ. Garibaldi is no common man."

Although Garibaldi's long life was full of thrilling exploits, each of which makes a stirring story, he is remembered chiefly for his part in two great adventures, the Roman Republic and the Sicilian Expedition. One was a failure and the other a success, but they both show at its best Garibaldi's flaming courage and patriotism.

II

Mazzini had been angry with Garibaldi for helping King Charles Albert instead of working, as he himself

was, for an Italian Republic. In 1849 the chance of the Republicans came. Infuriated by the Pope's ministers, the mob of Rome had succeeded in driving out Pius IX, and left the way open for Mazzini's Republican followers, who flocked to Rome to set up there the Republic of their dreams. The Pope appealed for help to France and French troops were at once sent to Rome. All quarrels were put aside, and Garibaldi brought his 1200 Legionaries to help with the defence of the Roman Republic. The three months' seige was foolhardy but very heroic, and probably the heroism of Garibaldi and his men in the cause of Italy's freedom did more than even victory could have done to rouse the spirit of other Italians.

It was a time of furious bombardment by the French encamped on the very outskirts of the city, of sudden sorties and attacks, of close struggles. There was terrible loss of life and appalling hardship, and yet Garibaldi could write to his wife, "We are fighting on the Janiculum (the highest of the hills of Rome) and this people is worthy of its past greatness. Here they live, die, suffer . . . to the cry, 'Viva la Repubblica!' One hour of our life in Rome is worth a century of common existence." That last sentence shows us more clearly than volumes could the real greatness of Garibaldi, disregard of danger, hunger for adventure, passionate love of his country. Anita never got this letter, for, realizing how great a danger her husband was in, she had already set out from Nice to Rome to share those dangers with him.

In June Garibaldi and his exhausted men could hold out no longer. Rather than surrender to the French, he determined to carry on the war in the countryside. On the day before the French were due

to enter the city, Garibaldi summoned his followers to the great square of St. Peter's. Seated on his great white horse, he called for volunteers in some of the bravest words ever uttered by a leader of men. "Let those who wish to continue the war against the stranger," said he, "come with me. I offer neither pay, nor quarters, nor provisions: I offer hunger, thirst, forced marches, battles and death. Let him who loves his country in his heart, and not with his lips only, follow me." We can remember a greater man saying something like that (in 1940) when this country faced dire peril.

As dusk fell, Garibaldi and four thousand followers left Rome. Among this following was Anita, who at the first stop on the way cut off her hair, put on man's clothing and rode on horseback with the men.

Heroic as is the story of the Roman Republic, the story of Garibaldi's retreat is even more so. Across the Apennines towards Venice they marched, with French, Neapolitans, Spaniards, Austrians, all waiting to trap them. Garibaldi eluded his pursuers by long night marches and clever scouting. Gradually his following dwindled, and few fresh recruits joined him. He released his followers, but would not treat with the Austrians and determined to try and win his way through to Venice. When after the terrible journey across mountains and marshes, always with the Austrians in pursuit, Garibaldi and his few friends reached the forests of Ravenna, his heroic wife Anita died from the hardships she had endured.

The chances of Garibaldi himself escaping seemed almost hopeless. He depended entirely on the loyalty of the peasants in whose cottages he had to hide. Not one betrayed him. On one occasion he had fallen asleep in the parlour of an inn. When he woke he

realized that two Austrian soldiers were sitting at his table discussing their plans to capture the "infamous Garibaldi." Quickly he let his head fall again on his hands, pretending to be a drunken peasant. At last he was able to make a dash for the sea and to embark secretly. As he stood in the stern of the boat looking towards Elba, from which another exile had gazed many years before, he cried out in ringing tones to his faithful band, "Viva l'Italia."

It was a long and weary time before that cry of Garibaldi's had a chance of fulfilment. He went for a time to America, but the unity and freedom of Italy were always in his mind, and in 1855 he returned and made for himself a small estate on the island of Caprera. Events in Italy were moving fast, for the lead had been taken by Cavour, the able statesman of Piedmont. In spite of his old Republican enthusiasms when he had been with Mazzini in Rome, Garibaldi realized that Italy's best chance was to unite Italy under the leadership of Sardinia, her strongest state. He had a meeting with Cavour and promised to give all his support to King Victor Emmanuel.

It was not until 1860 that Garibaldi saw and seized his great chance of success. Before that, he had been a picturesque figure, a hero to many of the Italian peasants, but never a victorious general. The cause of Italian unity was looking very much brighter. With the help of Napoleon III, the forces of Victor Emmanuel had defeated the Austrians, and in spite of the fact that Napoleon made a hasty peace, the north-west of Italy was now united under Sardinia, leaving Venetia, Rome and the Sicilian kingdoms still outside.

The Kingdom of the Two Sicilies (Sicily and southern Italy) was abominably ruled from Naples by a

Bourbon king, and the people of Sicily invited Garibaldi to lead a revolt. It was a task after his own heart. He collected a band of about a thousand followers, distributed red woollen shirts to them, and sailed from Genoa in two ships, and a British fleet ensured that the crossing was unhindered. In less than three months he and his Thousand "Redshirts" were masters of Sicily, although they were opposed by 20,000 Neapolitan troops. The success of this marvellous exploit was mainly due to Garibaldi's presence in the midst of every battle, and the sound of his "Avanti! Avanti!—Forward! Forward!"—as he urged his men on. Garibaldi then crossed to the mainland with his victorious troops, and the kingdom of Naples collapsed as he advanced. His march became a triumphal one and the people called him "a second Christ."

Victor Emmanuel and Cavour had openly ignored but privately encouraged Garibaldi, and in October 1860, Garibaldi, who had been named Dictator of the Sicilies, showed his statesmanship by handing over the government to Victor Emmanuel, and retiring at once into private life. As the King rode with his army into the Kingdom of Naples, he was greeted by Garibaldi and his shabby little band of Redshirts with the words, "Hail the first King of Italy!" The Union of Italy was now achieved, and Garibaldi retired to his island home.

The British people had warmly sympathized with Garibaldi in his struggle to unite Italy. In 1864 he visited an enthusiastic London. His love of the English became with him a romantic passion, and he laid a curse upon any Italian who should ever fight against Britain. "The uncertainty in foreign countries as to how the British Navy would be instructed to act . . .

was an important contribution to the success of the Italian cause."

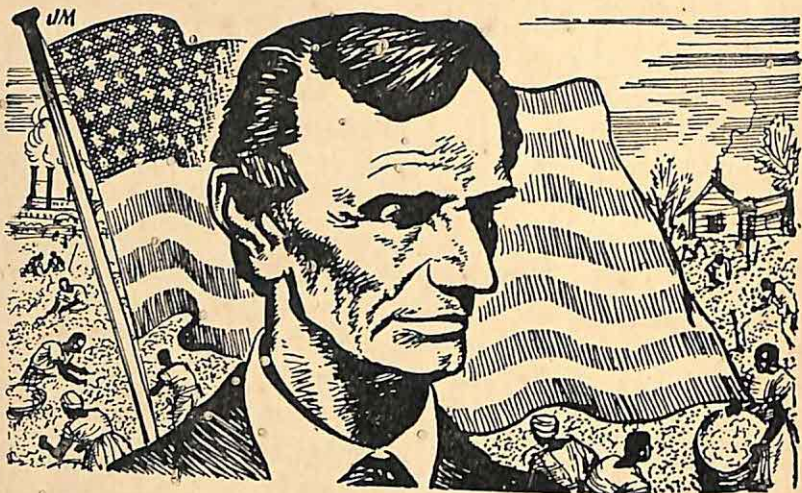
In 1870 at the age of sixty-three Garibaldi went off to fight for France against Bismarck's Prussian invaders. "Wherever an oppressed people struggles against its oppressors," he said, "wherever an enslaved people combats for its liberty, my place is in their midst."

The movement for Italian unity and freedom was known as the "Risorgimento" or "Resurrection." "Our country is now no more the Italy of the Romans nor the Italy of the Middle Ages, no longer the field for every foreign ambition; it becomes the Italy of the Italians." These words were spoken in 1859 by Victor Emmanuel, the first King of Italy.

But after the First World War another revolution began (1922) in Italy led by the dictator Mussolini. This blacksmith's son and his Blackshirts inherited something from the sailor and his Redshirts—love of Italy's past, hope for her future, adventure. Mussolini became the leader of the Fascist or Corporate State—and the ally of the Nazi dictator Hitler—and the Italian people have now to learn again the lesson Garibaldi taught them that "Liberty does not fail those who are determined to have it."

By his own single-mindedness, courage and faith, Garibaldi exercised a great fascination over Italy and liberty-loving people all over the world. "I had no idea of enlisting," said a young artist of Garibaldi's recruiting, "but I could not resist him. I left my studio, I went after him; thousands did likewise. He had only to show himself. We all worshipped him; we could not help it." Eleven years later, the artist was still fighting for Garibaldi in Naples.

In 1882, the bold buccaneer and Italian patriot died on his island, watching dawn break over the sea.



VII

ABRAHAM LINCOLN (1809-1865)

SAVIOUR OF THE U.S.A.

I

OF ALL those with whom this book is concerned, no other is more certainly a great man than Abraham Lincoln. And yet when we ask ourselves why this is so, the answer does not come so easily.

To some Lincoln stands first as the man who freed the slaves of America. Yet he was not a pioneer of this cause. The spadework of the Anti-Slavery movement in America was done by the Abolitionists whom Lincoln disliked and whose policy he opposed. To others Lincoln stands as the saviour of American Union. Yet he only saved it by plunging the country into the horrors of Civil War—the “Brothers’ War”—when many even of his own party urged moderation and compromise upon him. It was a great responsibility, and only a great man could have taken it and

earned with it the love and respect of his countrymen.

Abraham Lincoln was born in 1809, the year which also saw the birth of Darwin, Tennyson and Gladstone. He was descended from a Quaker family of English origin who once resided in Pennsylvania. The phrase "From log cabin to White House" has for a long time represented not only the romance of Lincoln's career, but also the chance of any little backwoods-boy to become President of the United States.

Lincoln grew up a real backwoodsman, living with his parents a rough, wandering existence in the vast Wild West of America, as they tried their luck at one settlement after another. In all his life he had less than twelve months' schooling. He taught himself almost everything he knew, learning from the very few but good books his family possessed. These included the *Bible*, *Æsop's Fables*, *Robinson Crusoe*, and *Pilgrim's Progress*. He read and re-read them until their language became part of him, and this is why Lincoln's speeches in later years were phrased in simple and dignified language which lifts them at once out of the common-place and gives them their unique place in American literature.

Lincoln was an odd and very original boy, tall and lanky and rather striking to look at, but far from handsome. He combined great strength with great gentleness. Cruelty he always hated. He could not bear to kill any living creature, and he loathed the way in which slaves were often made to suffer.

Very early he broke from his family and started to make his own career in the State of Illinois. He began as a storekeeper, and after many odd jobs he became a lawyer's clerk until at last he settled down in Springfield as a lawyer himself. He soon became a politician as well, for he was elected a member of the Illinois

State Legislature (Parliament). It was a rough but exciting training ground for a future statesman. There is nothing distinguished about Lincoln's early career, unless it be that at a time when corruption and intrigue were beginning to soil American politics, he kept a reputation for honesty, loyalty and outspokenness. Through these years of obscurity, he kept faith in his own future destiny.

Although for a short time he was a member of Congress at Washington, it was not until eighteen years after he had settled in Springfield, when he was forty-six years old, that "the life-story of Abraham Lincoln became one with the life-story of the American people." That story was crammed into the short space of ten years, as full of romance and glory and tragedy as have fallen to the lot of any man.

The event which brought Lincoln to the forefront of American politics was the birth of what we know as the Republican party. In order to understand what this meant, we must glance at the history of the years which followed the American Revolution of 1776 when the Thirteen States declared their independence of Britain.

When peace was signed between Great Britain and the United States in 1763, the new American Republic consisted of Thirteen States along the Atlantic coast. The Northern States were engaged mostly in farming, fishing and manufacture, while in the South were large plantations where cotton and tobacco were grown with the help of African negro slaves. In the North, slavery did not exist. In the South, it not only flourished but was looked upon as necessary for the prosperous and dignified life of the planters. There was much that was cruel and degrading about American slavery, and much that was happy and

humane. But as Lincoln said, "If slavery is not wrong, nothing is wrong." The struggle began because the Southern States were not content merely to keep the slave system as it existed, without any reforms, but wanted to extend it to as many as possible of the new States which were rapidly added to the Union between 1784 and 1854.

The Declaration of Independence had begun with very brave words : "We hold these truths to be self-evident :—that all men are created equal ; that they are endowed by their Creator with certain inalienable rights ; that among these are life, liberty, and the pursuit of happiness." In spite of this, slavery became the mainstay of the social system in the South, especially as the export of cotton increased. Slave and free States were at first added to the Union in equal numbers, and by a compromise in 1820 all new states north of the Missouri were to be free, while others were to be allowed slavery. In 1854, however, an Act left it to the people of Kansas to decide the slavery question for themselves. In the struggle which followed between Northern and Southern settlers in Kansas, the Republican party was born.

The Republican party, of which Lincoln was one of the founders, stood for the principle that there should be no further extension of slavery in the United States. Lincoln and his friends believed that to stamp out slavery they must wait, but that they must not wait to declare against the principle of slavery. Lincoln's position was quite clear. He believed slavery to be wrong and saw that he could have no common ground with those who believed it to be right. He also saw that "a house divided against itself could not stand," and that the United States could not for long remain half-slave and half free.

This was the faith of the Republican party, and because Lincoln was one of their most respected and also most moderate leaders, it was not long before he was nominated for President. "Well," said one of the delegates who visited Lincoln to invite him to stand for office, "we might have chosen a handsomer article, but I doubt whether a better."

A great American thus described Lincoln on the eve of his election as President. "At first sight there was nothing impressive or imposing about him; his clothes hung awkwardly on his giant frame; his face was a dark pallor without the slightest tinge of colour; his seamed and rugged features bore the furrows of hardship and struggle; his deep-set eyes looked sad and anxious. When he spoke, he was transformed; his eye kindled, his voice rang, his face shone and seemed to light up the whole assembly. . . . It was marvellous to see how this untutored man, by mere self-discipline and the chastening of his own spirit, had . . . found his way to the grandeur and strength of absolute simplicity."

As there was a split in the opposite or Democratic party, the result of the election was not in doubt, and in November 1860, Abraham Lincoln became the first Republican President of the United States. Although the names of Republican and Democrat have lost most of their original meaning, they are still used in American politics.

II

It was only too clear that Lincoln would not for long be President of a united country. Immediately on his election, he had to face the gravest decision ever made by any American President. Woodrow Wilson did indeed bring America into the Great

European War, but to plunge a country into Civil War is an even more terrible step to take. The dissatisfied Southern States at once prepared to leave the Union, to sever all connexion with their fellow-countrymen in the North and to set up in the South a Confederacy of Slave States. It was for Lincoln to decide whether they were to be allowed to do this, or whether the Union must be safeguarded by Civil War.

There is no doubt that the South seceded and afterwards fought for one main object, to keep, and if necessary extend, the slave system which had made them so prosperous. They also held passionately that they had a right to break away from the Union if they wished. On these issues they were firm, and as soon as the Republican victory in the elections was clear, they prepared to fight. The North were against any extension of slavery, and they were also determined that the Union should not be broken for any cause whatever.

Although the Civil War, which now broke out between North and South, was concerned with the issue of slavery, another great question had first to be decided. Had any of the States of the Union the right to secede and form a separate State? The South said "yes"; the North said an emphatic "no." It was this question above all others, even above that of slavery, that President Lincoln was determined to face. From the beginning Lincoln refused to compromise. He treated the Southern States as rebels, and he would hear no talk of coming to terms. The *United States of America* must be saved, and must become the great nation that Washington and other founders intended. For this ideal Lincoln, hating war as he did, accepted the challenge of a Civil War

(1861-65) in which for four years men hated and killed their fellow-countrymen.

On the question of slavery, Lincoln moved slowly and patiently. He was a very different kind of hero from the famous John Brown, who was filled with such anger against the slave-owners that he raided the slave States and freed many slaves and was hanged for it in 1859. Lincoln hated lawlessness; he did not easily "see red," and he had little sympathy for John Brown, "whose soul goes marching on." But in spite of his patience, he felt very keenly the cruelties of slavery; and when in 1862 he thought the moment was ripe, he issued a proclamation declaring that all slaves in States which were rebelling against the Union should be "henceforward and forever free."

This move of Lincoln's meant that there could be no going back, and that if war ended in victory for the North, slavery would be at an end in all the States. It also meant that thousands of slaves left their work in the South and joined the Northern armies, greatly weakening the Southern cause. Through the wise guidance of Lincoln and the rough genius of General Grant, the North gradually triumphed, until in April, 1865, General Lee, the brave commander of the South, made his final surrender.

Lincoln was not a military expert. His work during the war was, however, very difficult and very successful. He kept peace among the different factions of the North, he chose and loyally supported his generals, he kept up the courage of the people when the cause of the North seemed lost. Above all, he was a great moral force, a President to whom everyone could look as being above suspicion, of high character and high ideals. His speeches lifted his cause above

the horrors of war, and their simple and noble language lived in the memory. The final words of his speech at Gettysburg, in honour of those who had fallen in the war, are unforgettable :

“ It is for us here to be dedicated to the great task remaining before us—that from the honoured dead we take increased devotion to that cause for which they gave the last full measure of devotion ; that we here highly resolve that these dead shall not have died in vain, that this nation, under God, shall have a new birth of freedom ; and that *government of the people, by the people, for the people*, shall not perish from the earth.”

Before the end of the war, Lincoln was elected President for a second term. “ Both parties deprecated war,” he said in his address, “ but one of them would make war rather than let the nation survive ; and the other would accept war rather than let it perish.” Later in the speech came the immortal words, “ With malice towards none ; with charity for all ; with firmness in the right, as God gives us to see the right, let us strive on to finish the work we are in ; to bind up the nation’s wounds, to care for him who shall have borne the battle, and for his widow and his orphan—to do all which may achieve and cherish a lasting peace among ourselves, and with all nations.”

Five days after General Lee’s surrender, and before peace was declared, Abraham Lincoln was shot as he sat in his box at the theatre by a young and half crazy actor named John Wilkes Booth, who was an embittered partisan of the South. Lincoln died the following morning, his work still incomplete.

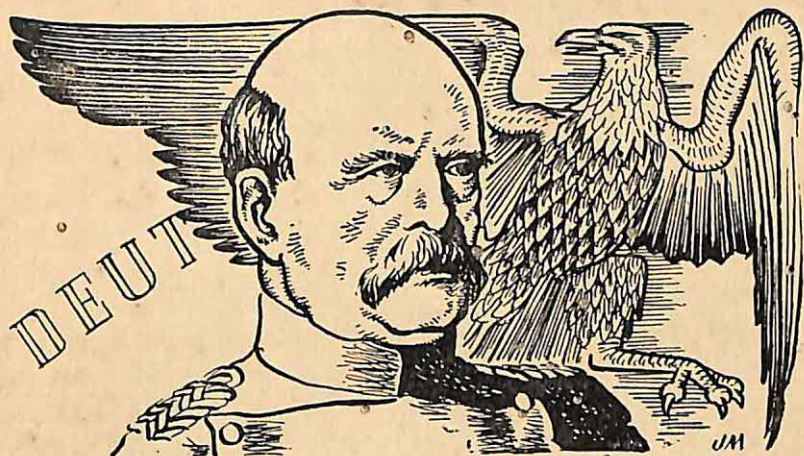
“ Now,” said one of his friends, as the end came, “ he belongs to the ages.”

With peace came—after many troubles and em-

bittered years between North and South—a renewed and strengthened Union between the States. Emancipation of the slaves followed, and on Lincoln's foundation the greatness of America was built. Had he lacked courage and faith, there might to-day be no *United States*. But the man himself was greater than his deeds. He was a common man with a love for his fellows. "God must have loved the common people," he once said, "because he made so many of them." In high office he never lost his simple dignity. He feared no one and hated only meanness and cruelty. He gave to the American people the spirit of true democracy, the pride of country, and sympathy with suffering humanity—the spirit that triumphed again in his great successor, President Franklin Roosevelt, when Nazi Germany in our own days tried to enslave the world.

John Drinkwater thus expressed in his play, *Abraham Lincoln*, his sense of Lincoln's greatness :

"Presiding everywhere
Upon event was one man's character,
And that endures ; it is token sent
Always to man for man's own government."



VIII

BISMARCK (1815-1898)

MAKER OF MODERN GERMANY

I

BISMARCK was born in the year that Napoleon was defeated at Waterloo. He belonged to an old Prussian family, to the squire class known as Junkers, and his boyhood was spent on his father's estates in Pomerania, a Prussian province bordering on the Baltic Sea.

Bismarck always kept many of the characteristics of the Prussian squire. He loved country life, his family, hunting, and good food and drink. He had immense energy, and was always sure of himself and impatient of others. He was lonely and melancholy, as so often those men are who seem more able or powerful than their fellows. As a university student, he is said to have fought many duels but only to have been wounded once. In appearance he was tall and muscular, towering over every assembly he attended, and stooping in order to enter the door. In old age he

was not unlike one of those mastiff dogs he loved to have round him, dignified, sombre and wrinkled, with large and penetrating grey-blue eyes which never lost their power.

Bismarck's youth was spent rather aimlessly. He had no special ambition, and there was then no German Fatherland to which he could devote his loyalty. Germany was still a collection of separate states and not yet a united nation. A German *Bund* or Union had been set up under the Emperor of Austria ; but it was a very loose and restless union of states, many of which hated the dominance of Austria. Later a Customs Union (or Zollverein) was formed which included almost all the German states except Austria. This Union helped to break down barriers and maintain free trade between neighbouring German states. It also taught them to look to Prussia as their head, now anxious to elbow Austria out of Germany once and for all—until in our own days Adolf Hitler took command of Germany and tried to incorporate Austria in the Third German Reich.

During the first half of the nineteenth century, Prussia was gradually ensuring her position as leader of the German states. Under her great statesman, Stein, who had brought about the anti-Napoleonic alliance between Prussia and Russia, she had re-organized herself and grown prosperous. Austria, under her chief minister Metternich, remained anti-liberal and anti-national. Only a small proportion of the population of her "ramshackle" Empire was really German, and she cared nothing for German unity, which she knew would eventually mean the triumph of Prussia.

That great year of revolutions and unrest in Europe, 1848, saw Bismarck's entry into Prussian politics, and

the overthrow of Metternich in Austria. Only those who were very deaf to patriotism could withstand the call of those times. Two demands were being made by patriotic Germans : one, for constitutional reform in the separate states, was successful in many cases ; the other, for a united Germany, was a failure.

In May of that year 1848, a Parliament met at Frankfort with deputies from all the German states, to see whether a constitution could be framed for a united German Empire. A plan was drawn up and the Imperial throne was offered to Frederick William IV, King of Prussia. It was a great opportunity to unite Germany, but he refused. "I cannot," he said, "accept a crown from the gutter." He would not accept favours from a Parliament but only from his fellow princes. Bismarck agreed, and remarked that the gold of the Frankfort crown might be very bright, but this gold could only be won by first melting down the Prussian crown. Bismarck had even then quite other plans for bringing about a united Germany. He did not mean Prussia to be merged in a democratic Germany, but he wanted Germany to be merged in Prussia and subject to the iron rule of the King of Prussia.

In 1861 William I of Prussia succeeded his brother as King. He was a blunt but genial soldier, with great force of character. He believed in the Divine Right of the King of Prussia. Bismarck had the same belief in kingship and the same religious feeling. It is said that he always kept a prayer book by his bedside, but the prayer book was interleaved with blank pages on which he jotted down the political ideas which came to him in the late hours.

Between the years 1851 and 1862 Bismarck served as Prussian deputy to the Parliament of Frankfort—

where he cherished and increased his hatred of Austria—and then as Prussian Ambassador to Russia and France. These ten years were years of experience and preparation. The following ten years to 1871 were years of action, swift and drastic years, which saw Germany united under Prussia, Austria forced out of the Germanic Union, and France utterly defeated and humiliated. It was in 1862, at the age of 47, that Bismarck was made Chief Minister, President and Foreign Minister, to William I. Parliament and the people were at first against the King and his Minister. But Bismarck soon had the whip-hand.

From the beginning of his period of power Bismarck had one burning desire, to ensure German national unity under the King of Prussia. He believed in force, not in "speeches and votes of majorities"; and because he thought that only by war could Germany gain her unity, he became known in his own words as the man of "blood and iron." The first task of William I and Bismarck was to build up a strong army in Prussia. In this they were helped by General von Moltke. "War," said Moltke, "is an element in the order of the world ordained by God." The words might equally well have been uttered by Bismarck, or later by Hitler and the Nazis.

Bismarck's "blood and iron" policy began by forcing a quarrel on Austria and then defeating her in battle. He found an excuse in the Schleswig-Holstein question.

The dispute about the two duchies of Schleswig and Holstein, which lie between Prussia and Denmark, was very complicated. Only three people, Lord Palmerston said, really understood it—the Prince Consort who was dead, a German professor who was

mad, and himself, and he had forgotten it. Briefly the facts were these: the duchies were connected with the Danish Royal Family, but all attempts to include them in the Danish Kingdom, had been resisted. Holstein was mainly German in race, and Schleswig mainly Danish. As a result, Germany threw covetous glances towards Holstein, and Denmark towards Schleswig, while each country had dreams of taking both duchies if opportunity offered. In 1863, just after Bismarck had been made Chief Minister, Christian IX of Denmark brought matters to a climax by claiming to be Duke of Schleswig-Holstein and showing every intention of bringing the duchies into the state of Denmark.

Immediately Germany and the duchies themselves were up in arms, and the rival claimant, the Duke of Augustenberg, set himself up as Duke. This is where Bismarck's chance came. He made up his mind to annex the duchies and to pick a quarrel with Austria. He was very cautious and very lucky. "My method in foreign policy to-day," he said, "is like my method in old times when I used to go snipe-shooting and when I would not put my weight on a fresh tussock until I had tried it carefully with my foot."

Bismarck, of course, did not want any German prince ruling a new German state. He managed to persuade Austria to join Prussia in settling the affairs of the duchies by refusing to recognize either the Duke of Augustenberg or to allow Denmark to annex the duchies. An ultimatum was issued to Denmark, and in defiance of every other country in Europe, the Austro-Prussian armies fought and defeated the Danes. The spoils were divided, Prussia taking Schleswig and Austria Holstein, and the first of Bismarck's three short and sharp wars was over.

The whole question illustrates better than any other perhaps the character and policy of Bismarck. He now succeeded against every probability in forming a friendly alliance with Austria. He forced Austria to do exactly as he wanted. He flouted the public opinion of Europe. He sacrificed the lives and liberty of the Danes, as well as of his own armies, in a futile and needless quarrel in which Prussia had really no concern. His double object was to annex the duchies, and then to bring on a quarrel with Austria.

The King of Prussia had been difficult to convince of the need for the war with Denmark, and he was now very reluctant to have a war with Austria, a war which nobody but Bismarck wanted. But Bismarck's will was too strong for King William, and at last his Prussian spirit and his pride in his army were stirred. Austria was attacked for her policy in Holstein, and Bismarck at the same time so flouted the German Parliament or *Diet* that the majority of the German States joined Austria. However, Prussia, with 350,000 men in the field, declared war on Austria and her allied states, although their armies were more than double the Prussian.

The years spent in perfecting the Prussian army reaped their fruit. The Austro-Prussian war lasted only seven weeks, and after a terrible defeat at Sadowa (1866) in the Bohemia province of her empire, Austria was at Bismarck's mercy. The terms he made were not harsh, but suited his policy exactly. Austria was to leave the German Union. All the German States north of the river Main were to form a Union under the King of Prussia, which proved, as Bismarck meant it to be, a powerful new kingdom. The South German States were to form a separate Union, free from the interference of Austria. Hanover, Schleswig-

Holstein and other smaller territories were annexed by Prussia. The province of Venetia (with Venice) was to be surrendered to Italy by Austria.

In this peace Bismarck showed great statesmanship and cunning. Austria was no longer an unpleasantly close rival. She was a possible friend and ally. She must not be harshly treated or degraded, for her neutrality would be very useful in the future. Bismarck's second war was over in seven weeks and his plans were working out very successfully. Prussia was well on the way to becoming the controlling state in Germany.

France was Bismarck's next objective. This was for two main reasons. The first was the age-long rivalry which was gradually growing more and more bitter between two great neighbouring nations. France saw Prussia growing stronger, and finally so strong that she had completely defeated the old Austro-Hungarian Empire. France felt this new upstart state of Prussia to be a menace. The second reason for the war with France was that Bismarck wanted to induce all the German States to fight together against a common foe. He believed that war would be the best way to make Germans feel brothers and allies, and he knew that war could only be waged and won by the Prussian army.

The outbreak of the Franco-Prussian war (1870-1) was another example of Bismarck's astute and cunning policy. By hinting that the French Emperor, Napoleon III, demanded—as a price for Prussia's gains after the Austrian War—some compensation at the expense of the South German States, he roused hostility to France on the part of South Germany. Again he showed his patience and tenacity by waiting until fate played into his hands. When a German prince was

invited to be King of Spain, Napoleon III protested, and not content with the prince's withdrawal, demanded through his ambassador that the Prussian King would never again support such a claim. The King of Prussia replied coldly that he had "nothing further to communicate to the ambassador." Bismarck, quick to put France in the wrong, published the account of this interview in such a way that it seemed to the French people that their ambassador had been insulted. This was done very deliberately by Bismarck, and it had the result he hoped for—it had, as he said, the "effect of a red rag on the Gallic bull." On July 15th 1870, France declared war. She was quite unprepared. Germany was ready and waiting.

The result of the war was another crushing victory for Germany. Prussia was joined by the South German States. She made an overwhelming attack on the Alsace Lorraine frontier. The French Army was badly equipped and badly officered. Their intelligence service and transport were bad. France was without allies. On September 2nd Napoleon III and a large army surrendered at Sedan. The Germans advanced and besieged Paris, and the people took cover from the guns in their cellars and shelters. In January 1871, the capital surrendered and the war was over.

II

It was Bismarck's great triumph, and he was a much more merciless victor than he had been after Sadowa. France had to surrender Alsace-Lorraine to Germany and to pay £200,000,000 indemnity. As a crowning humiliation it was in the Hall of Mirrors at Versailles—the famous palace of Louis XIV—that William I was declared German Emperor. As Bismarck read the proclamation which brought the

great German Empire into being, he looked pale but calm, "elevated, as it were, by some internal force which caused all eyes to turn on the great figure with the indomitable face,"

What a tragedy for Germany and for Europe that her rulers and people should have forgotten the noble ideals of empire proclaimed at Versailles in January 1871 by that first German Emperor !

"May God permit us and our successors to the Imperial crown to give at all times increase to the German Empire, not by conquests of war, but by the goods and gifts of peace in the path of national prosperity, freedom and well doing . . . to rule not in the spirit of the Emperors who during the Middle Ages wasted the strength of Germany in vain attempts to extend their dominion over other nations, but with the sincere desire to constitute an Empire of peace and prosperity in which the people of Germany may find and enjoy what for centuries they have fought and struggled for."

The Franco-Prussian war made Germany master of Europe and Bismarck master of Germany. As Chancellor, he was the most powerful official in the Empire, and for twenty years he guided the fortunes of the powerful State he had called into being.

Bismarck's policy had up to now been unscrupulous and violent, a policy of blood and iron. His great ambition was now realized, and he believed that Germany needed peace, and that if she risked more wars she would lose all that she had gained. Even when he saw France recover from her blow and grow stronger, thirsting for revenge, his policy was to keep her friendless and so harmless. The party which again seized the sword and urged Germany towards a policy of aggression, expansion and military domina-

tion was led by the Crown Prince who in due course became the Kaiser William II.

Bismarck had as Chancellor a double task, to see that Prussia's position in Germany was assured, and to secure the position of Germany in Europe. The first task he performed by giving Germany a government under which the chief power lay with Prussia ; and by opposing the Catholic parties who were hostile to Protestant Prussia. He also upheld the power of the Emperor and of the Chancellor by opposing the party of Social Democrats who were, in spite of his enmity, growing stronger every day. He hoped to remove the grievances on which Socialism thrived by compelling the insurance of wage-earners for sickness and old age. But neither in his struggle with the Catholic Church nor with the Socialists was he successful.

It was Bismarck's second task that was to him the more important, to strengthen Germany's position in Europe. It is for his system of diplomacy and alliances that he will best be remembered. He knew a better method than war to keep France weak, and that was to isolate her by preventing her from becoming too friendly with England, Italy or Russia. He was the only man, said the Emperor, who could juggle with five balls of which at least two were always in the air—Austria, France, Russia, Italy and England. He formed a strong alliance with Austria, and in due course brought in Italy to form the Triple Alliance in 1883. Russia had joined the League of the Three Emperors in 1872, and the wires were always kept open between Berlin and St. Petersburg—until Russia changed sides and concluded the Dual Alliance with France in 1894. Every effort was made to keep England in her "splendid isolation" from the con-

continent. Bismarck also laid the foundation of Germany's colonial empire in Africa.

After the young Emperor William II succeeded to the throne in 1888, the whole position was changed. William II was headstrong and ambitious and impatient of control and advice. Bismarck the autocrat was in his way and had to go. The old pilot was dropped in 1890 and the new Kaiser was left to go unguided on his way. That way was the way of naval and military glory, of colonial expansion, of ambitions in the Near East—"Berlin to Baghdad"—of rivalry with Britain; in short, the way to war.

There is nobody in history quite like Bismarck, and few who have so changed the history of the world. By his genius and strength of will he created the German Empire under the heel of Prussia, which made a different and more dangerous Europe. In its creation he was single-minded and sincere, but his methods in achieving it were violent and deceitful. Because he had a low view of the honour of nations and believed that the end justified the means, Bismarck was partly responsible for the conditions which brought about the two World Wars of 1914 and 1939.

When the First Great War broke out in 1914 Germany had no Bismarck. She had no Bismarck when the Peace Treaty was made, when defeated Germany in 1919 suffered in her turn, in that same Hall of Mirrors at Versailles, the humiliation she had inflicted in 1871 on France. After that War, when Germany became desperate, Bismarck's ideas were revived, his idolizing of the State, his contempt for the Jews, his jealousy of non-German subjects such as the Poles, Danes and French, and of institutions which would not fit into his system, not only the great

historic Catholic Church but also the German Socialist Party.

These Bismarckian ideas became the basis of the Nazi gospel which in 1939 led to the Second World War, under another Chancellor, Adolf Hitler, not a Prussian squire but an Austrian "artisan in the building trade," as he described himself in "Who's Who."

Since Bismarck embarked on his policy of blood and iron, the German nation has disturbed the peace of modern Europe no less than five times (1864, 1866, 1870, 1914, 1939). And with the Second German War of the twentieth century, mankind was "back at something which Greece and Christianity and the great religions did much to tame," a renewal of the struggle between barbarism and civilization, between slavery and freedom.

Bismarck was once asked what was the most important development in modern history. The great war lord replied, unguardedly and disgruntledly: "*The fact that North America still speaks English,*" the language of free men—and this fact Germany was to realize to her cost in the two World Wars of the twentieth century.



IX

LOUIS PASTEUR (1822-1895)

CONQUEROR OF DISEASE

I

ON THE field of battle in one of his campaigns, Napoleon decorated for bravery a certain tanner named Pasteur. This brave soldier had an equally brave son, Louis Pasteur, born seven years after Waterloo. He was not a soldier, but he was a fighter.

He fought disease. He devoted his life to the study of what we sometimes call germs or microbes which men of science call bacteria, a Greek word meaning "little rods." Bacteria are vegetable organisms—little rod-shaped plants—which exist in the air, water and soil, and in the bodies of animals and plants; some but not all are the causes of diseases, some convert matter into food for plants.

Louis Pasteur had a very busy and interesting life. He not only made some exciting discoveries about germs but he was able to use his discoveries in very

practical ways. He worked hard in his laboratory with test tubes and all kinds of experiments, but nearly all the time he was working to help people who were suffering in some special way from disease. Among the people whom Pasteur was able to help were brewers, breeders of silk worms, and cow keepers, all of whom were trying to carry on important industries in France. Pasteur was always very proud of being able to help his country in this way.

Louis Pasteur, born in a little French country town, was interested in chemistry when he was very young. After studying hard and showing great promise in Paris, he began to teach and lecture as Professor of Chemistry. He became a Professor at Strasburg in Alsace, and there he married a wife who was always to be his closest companion and assistant.

Pasteur was deeply interested in all the new experiments that were being made in chemistry, and made up his mind to solve some of the difficult problems that were worrying chemists and other scientists. Sometimes he would sit for hours, quite silent and motionless, thinking hard about one of his difficulties. He found this the easiest way to solve a problem ; and when he thought of a solution, his kind, worn face would light up with pleasure and excitement and he would rush round to tell his discovery to his wife and to others who were helping him.

In 1854 Pasteur was appointed Head of a College of Science at Lille, a busy manufacturing town in the north-east of France. He was pleased about this, because he always felt that trades and industries could be helped very much by the researches of men of science. His chance to be useful soon came.

Pasteur, as a young chemist, had always been interested in the problems of why and how living things

decay, why milk turns sour, why meat goes bad, why wine ferments. He started to give some lectures in Lille on fermentation. One of the chief industries in Lille was the manufacture of alcohol from beetroots, and he was fortunate in being able to carry out experiments in some of the breweries. One manufacturer consulted Pasteur about his beer, which was turning out badly, and Pasteur by helping this brewer managed to discover all sorts of things that he did not know before about yeast. Yeast is used to make beer frothy and bread rise up lightly. Pasteur became certain that yeast was alive, made up of tiny living cells. When these cells were healthy the yeast acted well, but if they were diseased the yeast and the beer went wrong.

After a few years, Pasteur was made Director of Scientific Studies at a famous college in Paris. He was still thinking about decay and yeast and germs, and one of the problems that he was trying to answer was this: "Do germs form from other germs, or do they just come of themselves?" People like Pasteur believed that germs were carried in the air and might infect other things that came in contact with them. Others believed in what they called "spontaneous generation"—that germs had no parents but just occurred by themselves.

Pasteur proved that he was right by a very simple and clever experiment. He put some broth into some flasks, and then he boiled it in order to destroy any germs that might already be in the broth. After that he heated and pulled out the neck of each flask until it formed a long narrow "swan neck" with a big bend in the middle. The broth remained there for a long time and it never went bad as it would have done if it had been standing in a bowl in the larder.

"That," said Pasteur, "is because there are no parent germs in the broth, and they cannot reach it because of the bend in the long tube." So he took one of the flasks and spilt a little of the broth down the tube so that it settled in the bend. This broth went bad. We often speak of "dust traps." Well, this bend in the tube was a dust trap, because the dust—which, as we now know, may carry germs with it—could get as far as the bend but no farther, and it settled there and infected the broth.

This is only one of many hundreds of experiments which Pasteur made to show how full the air is of dust particles and how germs may be carried by this dust. One very useful experiment was made to show the difference between pure and stuffy air. Pasteur again filled some flasks with broth. He took some into a stuffy little hotel bedroom, broke their necks off so that the air could enter freely, and after a few minutes sealed them up again. He then took some flasks into a field near by and did the same with them. Finally he opened some on the top of a high mountain and again sealed them up. What was the result? When they were examined, the flasks opened in the hotel bedroom were full of broth which had gone completely mouldy; the flasks opened in the field were mouldy, but not quite so bad; those opened on the mountain had no germs in them at all.

II

Nowadays we pay a great deal of attention to pure air, open windows, to freedom from dust, to garden cities. Pasteur was one of the first to show how necessary all these are if we are to fight against germs and disease.

Another very useful discovery of Pasteur's while

he was working in Paris was the process which we now call, after him, "pasteurization." Some French wine-growers were troubled by a germ which had turned their wine sour. Pasteur showed that by heating the wine, or milk, or whatever it might be, to a temperature of 50 or 60 degrees centigrade, the germs were made harmless. Pasteurized milk is milk which has been treated in this way and then sealed to prevent more germs from entering.

Louis Pasteur was what we should call an "all round" scientist. All the research which he did in his laboratories was meant to help his fellow human beings. It would be impossible to imagine Pasteur experimenting with explosives or poison gas.

Pasteur founded the branch of science called "bacteriology," or the study of bacteria, and he showed what a wide range it had by studying the bacteria in all sorts of different activities. For three years he spent all his time and energy in tracking down the cause of a disease which had ruined the silkworm industry. He began to believe that most, if not all, infectious diseases were due to certain bacteria which, if they got into the blood, multiplied there and caused disease.

Many other men were working and experimenting against such bacteria as were the enemies of man, which were invisible but present everywhere and always ready to attack. Dr. Jenner in England had already discovered vaccination for smallpox, but "inoculation" against other diseases had not yet started. Pasteur was trying to discover a cure for the terrible disease called anthrax, which men sometimes get from infected shaving brushes, and which was attacking cows and sheep in France and killing them off very quickly. He found out first of all that a cow

could not have anthrax twice. Then he began to wonder whether it would not be possible to make a cow and even a man just a little ill with anthrax, so that they might not get it again. Perhaps this could be done by giving the cows or sheep very weak old germs to make them safe or "immune" for the future. One can imagine how dangerous this idea of giving people germs must have seemed in those days. Many scientists were angry about it, but they agreed to allow Pasteur to prove it by a public experiment.

So Pasteur collected some sheep, goats and cows, and divided them into two lots. To one lot he gave injections of his weak anthrax germs. The other lot were left alone. Then on a certain day all the animals were injected with the most deadly anthrax germs that could be produced. On the third day after the experiment, a crowd of people gathered round the sheds to see what had happened to the animals. Pasteur, even although he was so sure of himself, must have felt nervous. All the two dozen animals that had first been protected by the weak germs were perfectly well. The deadly injection had done them no harm at all. Of the other two dozen animals, twenty-two were dead and the other two were dying. When the news spread that Pasteur had discovered a cure for anthrax, hundreds of people wrote to him for supplies of "vaccine" or weak germs, and he had to turn his laboratory into a kind of small germ factory.

Pasteur received many honours from the French Government, and in 1881 he came to a big medical Congress in London. When he walked down the hall, there was a tumult of applause. He looked round, thinking that the cheers must be for some royal person, for Pasteur could hardly believe that the applause was meant for him.

One of his last experiments was in connexion with the terrible disease which attacks a person who is bitten by a dog with rabies, a "mad" dog as we call it. Pasteur had grown very sure about the power of inoculation, and he decided to try out the same idea in cases of rabies. At that time nearly everyone died who was bitten by a diseased dog. In 1885 Pasteur made his first experiment on a young Alsatian boy who came to him in Paris covered with bites from a mad dog. The boy's mother told Pasteur, "If you can cure animals you can cure my son." So Pasteur inoculated him with some weak rabies germs and the boy recovered.

Although Dr. Jenner had already discovered how to vaccinate against smallpox, he did not really understand about bacteria. Pasteur after giving his life to this study was able to prove the value of inoculation, and to find out ways of varying it for different diseases.

During the First World War (1914-18), the troops going abroad were inoculated against such diseases as typhoid and enteric fever, and the very low death-rate from these illnesses among the troops, even in unhealthy places, was a great tribute to Pasteur's work.

Pasteur's memory is still honoured in the Institut Pasteur in Paris, where bacteriology is studied by men of all nations. At the opening of the Institute in 1888, Pasteur said, "Two opposing laws seem to me now in contest—the one, *a law of blood and death*, opening out each day new modes of destruction, forces nations to be always ready for the battle; the other, *a law of peace, work and health*, whose only aim is to deliver man from the calamities which beset him. The one seeks violent conquests, the other the relief

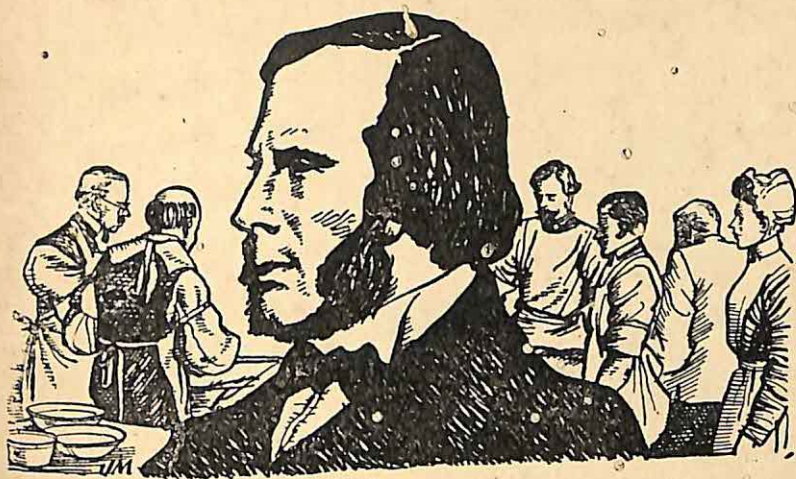
of mankind Which of these two laws will prevail God only knows ; but of this we may be sure, that science in obeying the law of humanity will always labour to enlarge the frontiers of life."

Of Pasteur in his old age, someone who knew him well, thus described him : " Weary, traversed with deep furrows, the skin and beard both white, his hair still thick and nearly always covered with a black cap ; the broad forehead wrinkled, seamed with scars of genius, the mouth slightly drawn by paralysis, but full of kindness . . . and, above all, the living thought which still flashes from the eyes beneath the deep shadow of the brow."

On Pasteur's 70th birthday his jubilee was celebrated almost like a national festival. Like Lord Lister (*see next chapter*), he was honoured in his old age by the scientists of all nations. At the crowded meeting in the great hall of the university of Paris, the old man was too overcome to speak and his speech was read to the distinguished audience by his son.

" The future," he said, as he mentioned the name of Lister, " will belong to those who shall have done the most for suffering humanity." To the young students he addressed a special word. " First ask yourselves, ' What have I done for my education ? Then as you advance in life, ' What have I done for my country ? ' so that some day that supreme happiness may come to you, the consciousness of having contributed in some measure to the progress and welfare of humanity."

Pasteur himself certainly knew that happiness. He died in 1895 when he was 75, and no name in science is more honoured or will longer be remembered.



X

JOSEPH LISTER (1827-1912) PIONEER OF MODERN SURGERY

I

IN THAT terrible first winter of the Crimean War (1854-6), one out of every two soldiers who went to hospital for treatment did not recover. The men died not of their wounds, but of every kind of blood poisoning, and other diseases such as typhus, scurvy and dysentery. Disease destroyed the army faster than it could be recruited at home. Things were little better in the Franco-Prussian War (1870-1). Although there was much less disease, the wounded soldiers were in just as bad a plight. In Paris ninety out of every hundred who had to have a limb amputated, died as a result of the poisoning which set in after the operation.

Forty-five years later in the First Great World War (1914-18) a very different story could be told. Soldiers going abroad were protected from disease by inocu-

lation. Marvellous operations were carried out on wounded men, with little danger to their lives. Everywhere the doctors and nurses were working day and night often under most difficult conditions, with little equipment and few instruments, and yet men seldom died from dirt and infection. A man whose wound was not dangerous knew he was going to recover. His grandfather in the Crimea knew that once he was taken to hospital he was very unlikely to leave it alive.

During the last half of the nineteenth century, a revolution took place in medicine and surgery which made this change possible. It has saved the lives of millions of men and women, a revolution far more important in the history of mankind than the conquests of a Napoleon. It made the hospitals into places of healing and of hope instead of places where people more often died than lived. It made it possible for surgeons to operate fearlessly because their patients got well instead of worse. No one man was responsible for this great progress in surgery. This chapter in praise of one great man must also be a tribute to many others, doctors and surgeons, whose names are often forgotten. The best known of these is perhaps Dr. James Simpson of Edinburgh, the son of a baker, who became a famous physician and who introduced the use of chloroform (1847). But we have taken for the subject of this chapter Joseph Lister, the man who was born in the bad times of surgery and who died only two years before the First Great War. During his lifetime, surgery completely changed, and the change was very largely due to his life and example.

Joseph Lister was a Quaker. His family were near neighbours of another Quaker family, the Frys, one of whom, Elizabeth Fry, the prison reformer, used to

attend the same Quaker meeting. Joseph Lister's father was much interested in microscopes, and he took a great deal of trouble in experimenting with lenses and making careful calculations. Joseph Lister himself was always interested in natural history, and at school enjoyed learning about the skeletons and insides of animals. He used to spend hours of time in his holidays dissecting fish and frogs, and was very proud when he put them neatly together again.

When he was quite a child, he made up his mind to be a surgeon. Fortunately his parents encouraged him, and every week of his long life, he wrote to his father whose example of patient experiment he never forgot. Lister went to University College in London and then to University College Hospital. But for nearly a quarter of a century he worked in Scotland, where his most brilliant work was done. He first worked in Edinburgh as House Surgeon under James Syme, one of the finest surgeons in Europe, whose daughter he married. When he was thirty-three, Lister was appointed Professor of Surgery in Glasgow. Nine years later he went back to Edinburgh and succeeded Syme as Professor of Surgery there.

Joseph Lister as a young man must have been very unlike Bob Sawyer and the wild medical students described by Dickens. He had a fine head and a grave earnest expression. He wore side whiskers in the fashion of the time, and in his youth he also wore the high collar, black stock and oddly cut coat that showed he was a Quaker. It is interesting to look at the hospitals as they were in 1860, and to imagine what must have been the thoughts of this clever and serious young doctor. Medicine was a very exciting profession for the student. The doctors of those days were very quarrelsome. They held different theories

and quarrelled with their opponents. All kinds of new operations were being tried. Chloroform was first used for an operation in 1847, just a century ago. It seemed as though surgery was on the eve of a great advance.

Unfortunately this advance was being held up. There were in due course a great many skilful surgeons who were ready to use chloroform (or some other similar anæsthetic) and with its help perform new and adventurous operations on the brain, the lungs, the spine and other unexplored places. They did not dare to experiment. Why was this? Because attempts at deep-seated operations were almost always disastrous. Even after less serious operations, it was always doubtful whether the patients lived or died. The reason for this was the sepsis or blood-poisoning which had almost always set in when a wound had been treated in hospital, or when the surgeon had himself made a cut in the skin with his knife.

Young Lister looked very sadly at the wards of the Glasgow Infirmary where he worked. Brilliant operations were performed on patients, which should have saved many lives. But just as a patient was getting better, a disease such as blood-poisoning or gangrene would so often begin, and the wound, though carefully sewn up and dressed, became swollen and painful with fatal results. Lister was worried not only about the high death-rate resulting from serious diseases in the hospitals; he began slowly to realize that surgery was very often being done under dirty and unhealthy conditions.

There is a story of Sir Astley Cooper, a great surgeon of his day, who had to operate on King George IV. When he paid his second visit to his royal patient, he noticed that the King looked at him

with disapproval, and when he returned home he asked his nephew what was wrong with his appearance. "I should have put on a clean shirt, or at least washed my hands before seeing the King," replied his nephew, for Sir Astley's shirt and hands were bespattered with blood. "Bless me! so I ought," he answered, "but I was not aware of it, and the King, sir, is so dreadfully particular." So you see that even the King's surgeon did not consider cleanliness so important. In Lister's early days the surgeon would wear a dirty old operating coat. He would carry his instruments about in his pockets all day without having them washed. He seldom washed his hands during his work, and would use the same instruments and sponges for several patients.

Lister tackled this problem of cleanliness first. The hospitals were horrified at the amount of money he wanted them to spend on soap, towels and fresh clean dressings. He made his assistants and the nurses wash their hands frequently. He did not allow the doctors and surgeons who worked under him to go from one patient to another without carefully cleaning their hands and instruments. The wards were kept spotlessly clean. All these precautions did not solve Lister's worries. Patients still kept on dying of their wounds after operations. But Lister noticed that one sort of wound never seemed to have dangerous results. This was what is known as a simple fracture, where, although bones may be badly broken, the skin is not torn.

Fractures like these usually healed quite naturally if they could be set without damaging the skin. He was determined to discover why an open wound was so much more dangerous than a closed one, why blood poisoning nearly always set in when the wound was

exposed to the air. In the late eighteen-fifties, Lister was telling his students in Glasgow that anyone who could explain this difference would be one of the greatest benefactors of the age. He became very interested in what other doctors were doing in other countries, and in 1865 he began to study the work of Pasteur. If you have read the last chapter, you will understand how Lister's work depended on Pasteur's work. Pasteur had proved that germs, or bacteria, can be carried by the dust in the air, and that it is certain kinds of bacteria which cause food to go bad. Was it possible that when a wound festered, exactly the same thing happened as when milk went sour or mutton went bad? So it was Pasteur who had the idea which made it possible to find out what was wrong with the hospitals.

But Lister was the only surgeon at that time who understood what Pasteur's experiments really meant, and his use of this knowledge entirely reformed surgery. Having found out what was wrong, he began at once patiently and courageously to put things right. He developed what came to be called the "anti-septic" system of surgery. ("Septic" comes from a Greek word meaning "putrefying.") Lister decided that to kill all the germs which might attack the wound, the best plan was to use some disinfectant. He chose the simplest and most efficient that he could discover—carbolic acid. Having arranged for perfect cleanliness in every place and everything connected with the operation, this is what he did. He laid on the wound a rag soaked with carbolic acid and covered this with a piece of tin sheeting to prevent evaporation. Another dressing was put over this, and the wound was allowed to heal quite naturally by forming a scab, which is always a safe way of healing so long as no dirt is left

underneath the scab. Lister's first patients to be treated by this system included three boys whose limbs had been badly broken in accidents and who were very ill. To his great joy they all got better and their wounds healed without any swelling or fever.

One of Lister's chief claims to greatness was his marvellous patience. He was never satisfied but kept on experimenting to make every part of his treatment as perfect as possible. His wife was very good in helping him with his notes, but often he must have been a great trial to his household. He was very unpunctual, and hardly ever had his meals at the proper times because he could never bear to leave any experiment once begun. One of his experiments was to discover the right kind of thread to use for the stitches he had to make in his surgery. He tells us that he made "hundreds of experiments" on catgut, and that every one added "something to his knowledge."

Gradually Lister perfected his system of destroying germs with disinfectant until hardly anyone in his wards ever died of blood poisoning. When he succeeded his old chief James Syme as Professor of Surgery at Edinburgh, he continued to spread the good news there. Sad to say, it was a very long time before Lister's great work was recognized by other doctors and surgeons. London was very obstinate, and whereas Lister's wards in Edinburgh were free from blood poisoning, it was still common in the London hospitals. When in 1877 he was appointed Professor of Surgery to King's College Hospital, London, many people looked upon him as a crank. Doctors abroad were much more generous, and at the International Congress of Medical Science at Amsterdam in 1879, Lister was greeted by the whole assembly rising to their feet and cheering him with waving hats and handkerchiefs. "Professor

Lister," said the President, "it is not only our admiration which we offer you, it is our gratitude, and that of the nations to which we belong."

Over twenty years later at a banquet given to Lord Lister (as he now was), it was the American Ambassador who said, "My Lord, it is not a profession, it is not a nation, it is humanity itself which with uncovered head salutes you." During those twenty years the fame of the antiseptic system spread. Everywhere surgeons realized that with the new methods and proper care they could operate safely, and the wounds would heal. Surgery was completely changed. The lives of millions of people were saved, and millions of operations were performed which no one would have dared to do before Lister made them safe. Lister had such faith in his system that he was not afraid to make a bold experiment during an operation on Queen Victoria.

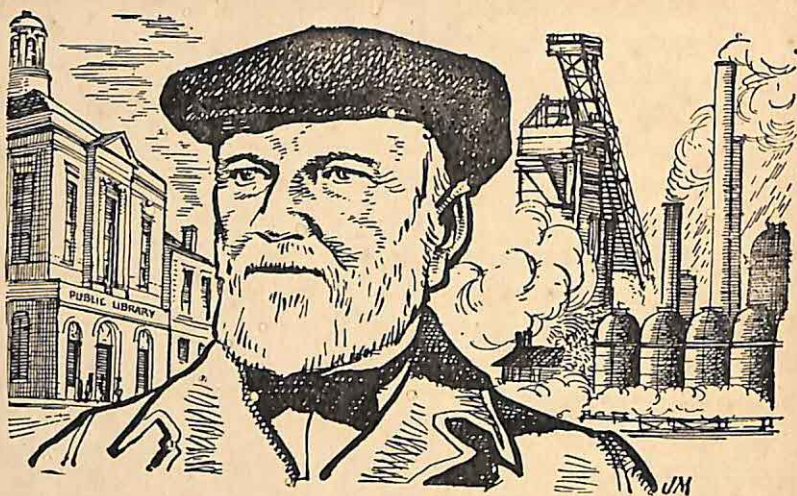
Lister died in 1912 after a long retirement. He had been honoured by his own and almost every other country, but was always modest and almost shy. "It is our proud office," he said to the Edinburgh students, in the old-fashioned words which he loved to use, "to tend the fleshy tabernacle of the immortal spirit; and our path, if rightly followed, will be guided by unfettered truth and love unfeigned." Against hostility, indifference and tradition he sought the truth and upheld it with all his strength. He wrote to his father after his first public operation, telling him how he had been helped by the feeling that God sustained him in his work. "If I act in this spirit," he said, "truly the practice of surgery is a glorious occupation."

"Listerism" as practised by Lister, is now superseded. Instead of the antiseptic or "anti-poison" method, surgeons now adopt an a-septic or "non-poison" method—called sterilization. This means

that instead of using a disinfectant which may injure the skin as well as the germ, and may make healing rather slow, the modern surgeon makes sure by the utmost cleanliness—bare rooms, rubber gloves, scrubbing, boiling—that no harmful germs can get to the wound at all, unless of course the wound was infected before the patient arrived at the hospital.

A famous French doctor, speaking at a banquet to Lister, summed up his work for mankind when he turned to the dignified bewhiskered old man and said, "Lord Lister, when we are asked why you are great, we reply because you have driven back death itself; because in all you have done, you have only caused tears of joy and gratitude."

"Lister has saved more lives," it has been said, "than all the wars of the ages have thrown away."



XI

ANDREW CARNEGIE (1835-1919)

MILLIONAIRE STEEL KING
HIS "GOSPEL OF WEALTH"

I

"It is a disgrace to die rich." The man who wrote these words, and who gave away seventy million pounds because he believed them to be true, was born in a one room attic home more than a century ago.

Andrew Carnegie was the son of a Scottish weaver, a native of Dunfermline. The father struggled to earn a living in what was a dying handicraft ; the son was to make a fortune in the new machine industry which was beginning to swamp all the old handicrafts. There could have been no greater contrast between the old and the new.

In what were known as the "hungry forties" of the nineteenth century, the elder Carnegie faced the prospect of starvation for his family. He could no longer

get work. Even his looms were sold. At last Mrs. Carnegie, a woman of great character and pluck, persuaded her husband to make a fresh start in the New World. So in 1848 a sobbing but excited twelve year-old boy watched the coast of Scotland recede from the deck of a whaling schooner, and wondered what the magic land of America held in store for him.

Andrew Carnegie never for a moment forgot what he owed to his Scottish upbringing. Although poor, the Carnegie family were prominent citizens of Dunfermline, and Andrew's father was a keen Radical and Chartist. He was a reader and debater, and taught his sons to love books and to express their opinions. Mrs. Carnegie was a devoted mother. "The child," she wrote to Andrew in later years, "that has in his father a teacher, companion and counsellor, and whose mother is to him a nurse, seamstress, governess, teacher, companion, heroine and saint all in one, has a heritage to which the child of wealth remains a stranger."

The sturdy, thoughtful Scottish boy began work in America at Pittsburg, full of ambition. The family were for a time desperately poor, the father sometimes making a little money as a hand-loom weaver, and sometimes by working in the cotton mills. Andrew started with a very unpleasant job in the boiler room of a bobbin factory, but this did not satisfy him for long. He became a telegraph messenger boy. At night he would lie in bed reciting in due order the names of householders in the Pittsburg streets. He tried to remember where every man lived and what he looked like. Quick and confident in his own power, he determined to master his business. He would arrive early at the office in order to study the Morse code. Soon the officials noticed how keen and trustworthy

was this boy, and he was promoted to be an operator. Andrew Carnegie was now the mainstay of the family.

One of the business men who used the telegraph office was attracted by the intelligence of the young operator, and gave him a job as telegraphist in the Pennsylvania Railroad Company. At eighteen young Carnegie felt capable of anything. With his enthusiasm for his work and his will to get on, he combined a love of reading and an interest in public and social questions which made his life always full and interesting. As a young man in the service of the railway company, Carnegie showed the qualities which were to make him the most successful business man of the nineteenth century. One day when he was left alone in the office and a complete breakdown occurred on the line, he took control, and by sending out sheafs of telegrams in his chief's name he managed to get all the trains running and the whole system working smoothly.

"What do you think that little white-haired Scotch devil of mine did to-day?" his chief asked a friend. "He ran every train on the division in my name without the slightest authority." "And did he do it all right?" "Oh yes, all right." It was not long before he was offered the post of railroad superintendent. "Do you think you could manage it?" asked his chief. "I was at an age," wrote Carnegie later, "when I thought I could manage anything."

While still on the railway, Carnegie began to make money. One day he met a man who showed him a little model of a railway sleeping-car. With his gift of imagination, Carnegie saw in his mind the great American railroads swept by sleeping-car expresses, and he persuaded his company to build some of these cars. The grateful inventor gave him a share in the

new company, and by the time he was twenty-four Carnegie was receiving £1,000 a year from this source.

During the American Civil War (1861-5), Carnegie was organizing railway services for the Northern government. All the time he was investing and reinvesting his money. When he was twenty-seven his income reached the great total of £10,000 a year. It was before the days of huge American fortunes, and the achievement is astounding. He was always able to make quick decisions, to take risks, to imagine the future. When he was thirty, Carnegie resigned from the railway company. He had fortune enough now to be able to plan his own schemes. He saw the immense possibilities of railway development in the vast American Continent, and he saw also the great opportunity which this gave to the metal industry that supplied the rails. With boundless enthusiasm he became an ironmaster.

The enormous growth of railways, with the opening up of the prairies of the vast Wild West was the most dramatic phase of America's history. During and after the Civil War, tens of thousands of railway lines carried new settlers further and further west and created what was almost a new continent. For fifty years after the Civil War, half the iron and steel produced in the United States was used by the railroads. Carnegie saw no end to the growth of transport, and he meant to be ready. At first he built iron bridges and rails, but it was not long before his imagination and energy were turned in another direction. On one of his voyages to England he met Henry Bessemer, who had just perfected a new method of making steel: a converter which could transform iron into steel on an immense scale and at less cost. When Carnegie saw the converter working, he was fired with enthusiasm. All

he had done before seemed wasted. Gone were all his visions of retirement and a peaceful life. "The day of iron has passed," he shouted to his bewildered friends. "Steel is King!"

The rise of the steel industry was one of the great romances of the later nineteenth century. The almost magical growth of railways would never have been possible without the new, strong, durable, cheap steel rails. The modern express train would have crushed the old rails to powder. Transport became cheap.

Carnegie's dream of the future of steel was more than fulfilled. Under his guidance steel, from being the "hot-house plant" of America, developed into the hardiest of growths. Steel bridges, steel machinery and tools, steel warships, wire, pipe-lines, bicycles, and finally enormous steel houses or skyscrapers, all these and more brought prosperity to the new industry. On a huge proportion of the steel used, not only in America but all over the world, was indented the name "Carnegie."

Carnegie's reign as Steel King, with his vast works in Pittsburg, his iron mines and coalfields, private railways and docks, lasted from 1875 when he began to build his first steel works until 1900 when he sold his interest in the business to his fellow-millionaire, Pierpont Morgan. During that time, he not only built up the greatest business enterprise in the world but became the world's richest man. He owed his success to several things. He had unfailing courage and imagination, and this enabled him to extend his business in times of depression, so that when trade revived he was ready to forge ahead of his competitors who had waited too long. He had also a flair for choosing his assistants; he surrounded himself with young men of great ability and he knew how to use

each man's abilities to the best advantage. He never invested outside his own business, nor did he let his partners do so. The money made in steel was put back into steel. All his eggs were in one basket, but no one could have watched the basket more anxiously.

II

As America grew and prospered after the Civil War, American millionaires appeared in large numbers. If Carnegie had merely been the richest or the ablest of these, he might not have been very interesting. But there were two things about Carnegie which were very unusual, and which make his life a most interesting study. They are summed up in two of his maxims: "Enjoy life—do not be a slave to work," and again, "It is a disgrace to die rich."

Business was only half his life, and he would have said the less important half. He wanted travel, time to read and write, the leisurely life of a country squire. This he managed to achieve by leaving his business in the hands of the men he had chosen for that purpose and spending at least six months of each year, either in travel or as a laird in Scotland where he became owner of a large estate. Perhaps the greatest moment of Carnegie's life was in 1861 when, mounted with his mother and some friends on his own coach and four, he drove north to Dunfermline. The town had decreed a holiday. Banners across the streets were blazoned "Welcome, Carnegie," and the townspeople, in their Sunday best, assisted with brass bands and bagpipes, welcomed home the emigrant of nearly forty years before.

In Pittsburg and New York he was the steel magnate boss of thousands of workers in factories and mines, ruthless with his rivals, determined to get every ounce

out of his employees. In Scotland he was the kindly and benevolent squire, generous to his tenants; the friend and host of Gladstone, Morley, Herbert Spencer and many other public men, the lover of nature and of literature. It is difficult to reconcile the two, and it is not surprising that Carnegie has been criticized for leaving so much of his work to be done by others.

During one of his absences, a terrible strike took place at one of his factories. It was mishandled, and perhaps if Carnegie had been on the spot, bloodshed could have been avoided. But he believed that the job of running the business was best done by his colleagues. His function was to think things out, to create and plan. For this he said he needed quiet and leisure, and the contact of cultured minds. Work never became his master. He made money with which to enjoy life.

But there was another and much deeper purpose behind Carnegie's money-making. When he died, there was found among his papers a little yellowed sheet covered with his own writing. It was a kind of plan for his life which he had written at the age of thirty-three, just when he first realized that he was going to be a very rich man. This is how it begins: "By this time two years I can arrange all my business as to secure at least 50,000 dollars per annum. Beyond this, never earn, make no effort to increase fortune, but spend the surplus each year for benevolent purposes." The young Carnegie went on to say that he intended to retire at thirty-five, to settle in England and improve his education, to devote himself to public affairs, especially those connected with education and the poorer classes. He determined never to give way to the worship of money.

In later years Carnegie often read over this little

document. He never forgot the ideal he had set before him. In his writings and conversation, he constantly declared that he would consider it "disgraceful to die a rich man." He believed that a rich man's life should be divided into two parts, the first making money, and the second giving it away. This task of giving money away he believed to be as difficult and as important as making it. Many laughed at him, but to all his critics he answered, "Wait and see."

In 1900 Carnegie retired. He wrote down on a piece of paper the price he wanted for his business. The paper was taken to his fellow millionaire, Mr. Pierpont Morgan, who looked at it and said, "I accept." The price was £80,000,000, the biggest business deal ever made.

Then for nearly twenty years Carnegie gave his money away. "After a time," he wrote to a friend at the time of his retirement, "I shall become a wiser and more useful man." Those were brave words for an old man, and it is probably true that the last years of his long life were the happiest and most useful. Carnegie had strong views about the best way to use his money. He fought against ignorance, which he believed to be the root of all evil. He preferred to finance scientific research rather than hospitals, and libraries, universities and schools rather than other forms of social work.

To any town in the United States or the British Isles that asked for one and promised to support it, he gave a public library. By the Carnegie Trust for the Scottish Universities he endowed Scottish education for ever, providing for research and the payment of fees for poor students. In America he founded the Carnegie Institution for scientific research, built the Mt. Wilson Observatory, and helped every kind of

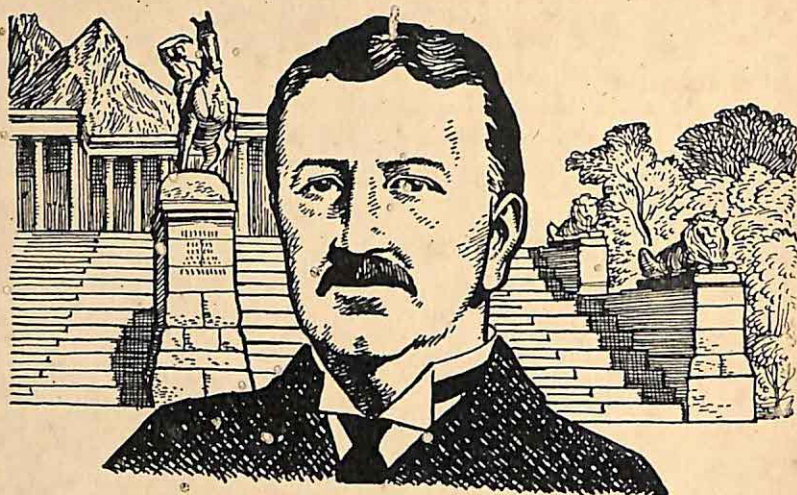
scientific study. His love of music made him enjoy providing organs where they were badly needed. Finally he formed the Carnegie Corporation both in America and in Great Britain, leaving a huge income in the control of trustees, to be spent year by year on the purposes he specially intended, education, libraries, organs, the work of peace, scientific research, pensions for public men, and many others.

Carnegie lived through the First World War. His active mind, at that time and for many years before, had been working on the idea of a "League of Peace," and in 1910 he gave a large endowment for "International Peace." Carnegie introduced this in words which may seem far-fetched but which were sincere—"Let my Trustees ask themselves from time to time, from age to age, how they can best help man in his glorious ascent onward and upward, and to this end devote this fund." In 1919 at the age of eighty-four, Andrew Carnegie died, and it was found that he had in his lifetime given away ninety per cent of his millions.

There was in this little, cocksure, talkative Scotchman an element of greatness. He was a tremendous personality, full of imagination, and freshness of outlook. "He is an idealist," said his friend John Morley, "who lives and works with his ideals, and drudges over them every day of his life." Perhaps his optimism carried him too far. Although he called himself radical and a democrat, he lived his life apart from the mass of the workers on whose skill and pluck he depended. He was not really one of the people. He was separated not so much by his money as by the fact that he did not share their struggles and dangers. But the real greatness of Carnegie lies in his ideals. After Carnegie's example had staggered the business

world, a great change took place in the attitude of many very rich business men. We have only to think of Rockefeller, Lord Nuffield and others to realize how closely they have followed Carnegie in their desire to avoid "the disgrace of dying rich." His "Gospel of Wealth" has profoundly influenced the modern world.

In a letter to him from a friend, this is plainly put: "I estimate the value of your life not so much by the wealth you have attained, or even the distribution of it, as in the fact that the whole sentiment of mankind will be affected by the principles which you have laid down and which you are putting into practice. It seems to me that your position in the history of social development will be that of the man who first compelled wealth to recognize its duties, not merely as a matter of moral obligation but of a decent self-respect on the part of men who control large fortunes."



XII

CECIL RHODES (1853-1902)

IMPERIAL VISIONARY AND STATESMAN

THE pioneers who built the British Commonwealth have not as a rule been men of renown. Its story is largely a story of ordinary people with energy and courage, whose names have sometimes been forgotten. There is an exception to this in the case of South Africa.

Fifty years ago the figure of Cecil Rhodes dominated not only South Africa but a large part of the world. His life was cut short in middle age, and it is not easy nowadays to recapture the fascination of Rhodes. His speeches were effective but they do not read well. He left few letters, and most of his papers were burnt in the fire which destroyed his home. We have to rely on the memory of his friends and the vivid impression he made on all those who met him. We know the work he achieved and the mistakes he

made. The real Rhodes we cannot know so well, but we do know that he was a giant of his times.

Cecil Rhodes was born in 1853, the fifth son of a country vicarage at Bishop Stortford. He was a delicate, reserved boy, educated at the local grammar school. On leaving school he showed no sign of wanting to be a parson like his father, or a soldier like four of his brothers. One of the Rhodes's sons was settled in Natal, and Cecil, who was threatened with consumption, was sent out to join him. "Not six months to live" was the verdict entered in the diary of the eminent physician he had consulted, an entry that Rhodes himself saw years afterwards.

Before the discovery of diamonds and gold, South Africa was a poor and somewhat unhappy country. There were two British colonies, Cape Colony and Natal, and two Boer republics, the Orange Free State and the Transvaal. There was ill-feeling between the two white races, in spite of the fact that they both lived in danger from the natives who enormously outnumbered them; six out of seven of the people of South Africa belong to the coloured races. England for some time was not at all anxious to assume more responsibility in Africa, and had said firmly that she did not want to extend her territory north of the Orange Free State. The vast interior of Africa had been opened up by great explorers, of whom the missionary, Dr. Livingstone, was the greatest. In the south there were the British and Dutch, with the Germans to the west and the Portuguese to the east. A great opportunity awaited a man of energy and imagination. This was the moment when Cecil Rhodes went to Africa.

No part of Rhodes's career is more astonishing than the story of his early years in South Africa. At seventeen he sailed in a windjammer to join his brother

who was already farming there. At eighteen, when his brother had gone off to prospect for diamonds, Cecil Rhodes took sole charge of a two hundred and fifty acre farm and its swarm of native labourers. Six months later, armed with a few tools and some classical books and a Greek lexicon, he journeyed four hundred miles in an ox cart to join his brother in the diamond fields. Soon after he arrived at the mining centre, which was afterwards called Kimberley, he was left alone to look after diamond claims worth £5,000, to keep order among the native labourers, and to hold his own in the rough crowd of diggers of every nation and every type. A view of the young Rhodes of eighteen gives a clue to much of his later career. We see, in the words of one who noticed him at Kimberley, "his tall figure crumpled up on an inverted bucket, as he sat scraping his gravel, surrounded by his dusky Zulus . . . moody and deaf to the chatter around him, his blue eyes fixed intently on his work or on some fabric of his brain."

We might make a very shrewd guess at some of Rhodes's thoughts as he sat on his bucket at Kimberley. First he thought of the work in hand, and he had visions of a great diamond-mining industry, orderly and well-managed and prosperous, and controlled by himself. His next dream was a very different one. He dreamt of Oxford, and of his plans to go back and take a degree at the University before beginning his real work in South Africa. He had a third dream—of Africa made peaceful and civilized and prosperous by the help of the British people. As he trekked across the African veld, or brooded in the Kimberley streets, he was always possessed by this idea.

Rhodes's second dream was the first to be realized, for at the age of twenty he went back to England and

to Oxford, where he continued to enjoy his classics. But South African business affairs kept him very busy, and he visited Kimberley in his long vacations. There can have been few stranger undergraduates than this young diamond digger, already a hard-headed man of business, rapidly becoming rich by speculation, but revelling in the quiet Oxford life and in the ideas of citizenship and public spirit which he learned there.

Before he left Oxford, Rhodes's first dream began to come true. He started buying up other people's claims at Kimberley, until he was able to form the De Beers Mining Company, and to carry out the improvements in the apparatus, labour and marketing that he had thought out years before. Sixteen years after his first arrival in Kimberley, Rhodes and his Company had, by buying out their chief rival, Barnato, secured control of the whole diamond industry. He was then thirty-five. Everything that Rhodes touched seemed to turn to gold. He became one of the richest men in the world, and he was proud of it. He had still his third dream to realize, and because he believed that money was essential to success, he devoted himself to making more and more of it. Not content with diamonds, he was one of the pioneers of the gold-fields when gold was discovered in the Transvaal in 1886. His Company, the Consolidated Goldfields of South Africa, was one of the richest and most powerful on the Rand.

But this is to anticipate, because long before the gold rush, Rhodes took an important step in his career by becoming a politician, and at the age of twenty-seven he was a member of the Cape Parliament.

One of Rhodes's great ideas for the future of South Africa was to colonize the great tract of the interior with men of British birth. His other great scheme was

to make South Africa a republic, uniting together in one government the white peoples, English and Boer. He believed that these two aims could best be achieved not by the Colonial Office working from London, but by the government of Cape Colony itself. Rhodes soon proved himself a very active and rather inconvenient member of the Cape Parliament, for he lost no time in suggesting ways of adding to their territory which he thought should not be missed. The first step northward was taken in 1885, when Bechuanaland was declared a British Protectorate, against the will of Rhodes who hoped to see it annexed by the Cape. But the Cape statesmen were not so eager for adventure as he was.

The only man who seemed to realize what force there was in Rhodes was Paul Kruger, the famous Boer President of the Transvaal. When he was a boy of ten, Kruger had taken part in the Great Trek of the Boers to the north of Cape Colony. His idea of a Boer Republic and Boer extension northward ran directly contrary to the ideas of Rhodes. "That young man," Kruger told his friends, "will cause me trouble if he does not leave politics alone Well, the racehorse is swifter than the ox, but the ox can draw the greater loads. We shall see."

Rhodes was quick to realize that to develop British territory northward he must get control of Mashonaland and Matabeleland before either President Kruger or the Germans could do so. Lo Bengula, the Matabele chief, was distracted by visitors of different kinds who all wanted him to promise them rights over the minerals in his country, and freedom to make their way through it in safety. Partly by persistence and partly by the persuasive tongue of his friend, Dr. Jameson, Rhodes got from Lo Bengula the coveted

concession giving him control over these countries. He knew that neither Great Britain nor Cape Colony was anxious for adventure in the north, and he determined to colonize it with his own efforts and his own money. He managed to get a Royal Charter granted to his British South Africa Company, with almost absolute power over an unlimited territory.

So it happened that at the age of thirty-six, Rhodes had in his own hands the key to Central Africa. Many people criticized the British Government for giving such great powers to a private company, controlled by a millionaire. It might have been very disastrous, but fortunately Rhodes had a strong sense of responsibility, keen sympathy with the native races, and great respect for the Boers.

In 1890 Rhodes was made Prime Minister of Cape Colony, and this new responsibility prevented him from marching northward with the column of young pioneers who first settled the country that was to be called Rhodesia. Nearly two hundred young men, full of adventure and led by a dashing young contractor named Johnson and the famous explorer Edward Selous, assembled at Mafeking and began their long and dangerous trek through difficult and hostile country until at last they reached Fort Salisbury. Rhodes soon visited the new settlement. "A big heavy-looking, carelessly-dressed man," runs a description of him, "not unlike a Dutch farmer, with an awkward, slouching figure, and a dull, rather expressionless face who talks in a curious, dreamy way, as if he were half asleep."

During the five years that Rhodes was Prime Minister of Cape Colony, he set before himself two great aims—the fair treatment of the natives and the union of the white races in South Africa. He was now

immensely rich and a very well-known figure. Even the London bus drivers, would wave their whips at him as he passed along the pavement during his visits to England. He was then a good deal of a hero to those who were called "Imperialists" and who were thrilled at the idea of a larger and stronger Empire.

But Rhodes was not without faults. He was arrogant, obstinate, and sometimes brutal. He had many critics. He was accused of exploiting the natives, using their ignorance for his own advantage. But although there was some truth in this charge, Rhodes was a loyal friend to the native population as a whole and was greatly beloved by them. After the death of Lo Bengula, whose territory he had used for his own advantage, he cared for and educated the chieftain's sons. The Glen Grey Act, which established native reserves and gave the natives very important rights of self-government, was his greatest political achievement.

Rhodes was accused of being too friendly with the Boers, and of snapping his fingers at the British Government. It is true that he was always anxious to work with the Boers for the union of South Africa, but this did not mean disloyalty to the Empire he so passionately served. But he was distrusted by all the people who hated "Imperialism" and who believed that the grab for new territory made for a proud and selfish attitude. To them he was the type of all they most disliked.

The dazzling career of Rhodes was cut short by a catastrophe known as the Jameson Raid. When gold was discovered (1886) in the Transvaal, men from all parts of the world swarmed into the mines to try their fortunes. These foreigners, Outlanders or Uitlanders, some of them undesirable characters, were greatly disliked by the old-fashioned Puritan Dutch farmers.

President Kruger was hostile to the newcomers and to the British and was opposed to any form of union with them. When Dr. Jameson, with six hundred horsemen, invaded the Transvaal at the end of 1895, he was obliged a few days later, to surrender to Kruger's force.

Jameson was Rhodes's friend, and Rhodes had given the rebellion his support, which was an improper policy for the Prime Minister of Cape Colony. Although he had tried to stop Jameson at the last minute, he remained loyal to his friend and shared with him the responsibility for what was a most unfortunate adventure. Rhodes had to resign the Premiership; the Raid made relations between British and Boer much more bitter, and it led President Kruger—counting on the sympathy of the German Kaiser—to prepare for the war with England which broke out in 1899. In that tragic war, Kruger was the Boer leader. He “knew personally every burgher in his republic and had known most of their parents. He regarded himself as a prophet chosen by God to guide a chosen people into the way of righteousness and safety.” The great Boer patriot died in 1904 before free responsible government was granted.

Cecil Rhodes, in his remaining years, carried out two of his most important works. As he bravely said when he faced the world again after his fall, “I am just beginning my career.” His first triumph was the settlement of the Matabele war. Although the Matabele natives had been defeated by the British forces, they were not pacified and had retired into the Matoppo Hills. There Rhodes followed them, riding unarmed into the midst of five hundred armed warriors to hold a conference with them. By his tact and commonsense he made a lasting settlement, leaving

no grudges behind, and the natives looked upon him as their father and protector. It was very fitting that his last resting-place should be on the summit of one of those same Matoppo hills, a resting-place which he bequeathed to "those who deserve well of their country."

The second triumph of Rhodes's later years was the development of Rhodesia. His heart was in his work. He made railways and telegraphs, started new industries and carried out a great fruit-farming scheme. He loved the work of the pioneer. "You are civilizing," he said to his Rhodesians, "a new part of the world. Those who fall in that creation fall sooner than they would in ordinary life, but their lives are better and grander."

When the Boer War began in 1899, Rhodes was an ill and tired man. He loyally supported his mother-country, but the waste of life and effort wounded him deeply. "You think you have beaten the Dutch," he said when the war was almost over, "but it is not so. The Dutch are not beaten; the country is still as much theirs as it is yours, and you will have to live and work with them hereafter as in the past." These words show the statesmanship of Rhodes. Although he died before the four colonies—Cape Colony, Natal, Transvaal, Orange Free State—were joined into a Union, he as much as any man was responsible for it.

The Union of South Africa was formed in 1910, and it was General Botha, another great Boer patriot, who then gave England this inspiring message: "You in England have given us the hand of friendship, and we have taken it and shall not let it go." Nor did they let it go, for those two great generals, Botha and Smuts, gave their whole-hearted support to England in the First World War, and Smuts (now Field Marshal)

was pre-eminent among the statesmen of the United Nations in the Second World War.

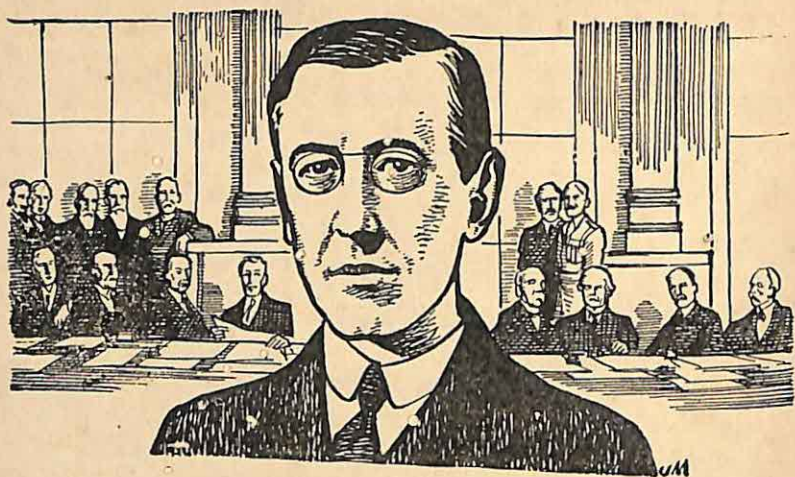
By 1902 Rhodes's task was over. Everything is too short," he had complained. "Life, fame and achievement, everything is too short." The same energy and love of life were in his last words: "So little done, so much to do."

By his will—the last of many wills which he made to show how he intended to use his wealth—Rhodes proved how great was his love for England and his belief in her. He left a large part of his fortune to found scholarships by which young men from the Overseas Empire and from the United States and Germany might spend three years in study and companionship at Oxford, hoping thus to further the aim which he had cherished as a boy when he sat and dreamed at Kimberley—"the enlargement of the British Empire and with it the cause of peace, industry and freedom." Of this scholarship scheme, Cecil Rhodes once said to a friend: "When I am alone in a railway carriage I shut my eyes and think of my great idea. It is the pleasantest companion I have." To General Gordon he once said: "It is no good having great dreams unless you have the cash to make them come true."

"The World's View" was the name he gave to the mountain top where he wished to be buried, and there when his coffin was borne in a gun carriage up the steep slope, attended by hundreds of his Rhodesian settlers, the Matabeles gave him a royal salute.

On his memorial on Table Mountain were inscribed these words of Kipling:

"The immense and brooding spirit still shall
quicken and control,
Living he was the land, and dead his soul
shall be her soul."



XIII

WOODROW WILSON (1856-1924)

PIONEER OF A LEAGUE OF NATIONS

AT THE most critical period of the First World War (1914-18), there was one man, and one man alone, who weighed in his hands the balance of victory and defeat. That man was Woodrow Wilson, the President of the United States of America. He did a very courageous and unexpected thing. He tried to make the nations who were at war think clearly why they were fighting, what they really wanted, and how they could make it impossible for such a war to happen again. We are often told that Wilson was a failure. His failure was more glorious than many men's success.

Woodrow Wilson's earliest memory was of two men meeting on the day on which Abraham Lincoln was elected President, and of hearing one say to the other, "This means war." It is a strange thing that these two great men, Lincoln and Wilson, so alike in their honesty and single-hearted courage and in their love

of peace, should both have plunged America into the horrors of war.

Woodrow Wilson was born in Virginia in 1856 of Scottish-Irish descent. His father was both a Professor and a Presbyterian minister. His mother, Janet Woodrow, was the daughter of a Scottish missionary and minister. It is little wonder that Woodrow grew to manhood with a serious and scholarly mind. His father encouraged his love of study, and also taught him to care for the English language and to express himself easily and simply. "Nobody has a thought," he said, "until he can put it quickly and definitely into words."

In 1875 Wilson went to Princeton University, and while there he became deeply interested in English history and the English constitution. One of the things that struck him most was that, in England, politics has always been regarded as a noble profession. To become a member of Parliament is looked upon as an honour and a responsibility. There is no question of making money out of it, or of using it as a help to business. But when he looked at American politics, Wilson found a very different state of affairs. Politics, and especially municipal politics, were corrupt and under the control of powerful "bosses" whose main interest was to increase their power and make money. And so American politics were distrusted by many decent men. Young Woodrow Wilson was determined to purify American public life. It was a very big ambition, and the forces against him were very strong, but he had courage and patience.

This courage was needed when, after some years as a professor and lecturer, Woodrow Wilson was in 1902 made President of Princeton University. He was not afraid to become very unpopular when he tried

to carry out certain reforms in the University. He wanted to make it more democratic, and to bring the rich and poor students together instead of keeping them apart in social groups. His ideas were bitterly opposed by the trustees of the University. It was the failure of his reforms at Princeton that led him to accept the offer which came to him in 1910 to stand as Governor of the State of New Jersey, and in that office he first made his real mark on America.

"I had no merit as candidate for Governor," he said, "except that I said what I really thought, and the compliment that the people paid me was in believing that I meant what I said." In later years hard things were said of Wilson. He was accused of lack of firmness, of insincerity and cowardice. His critics might have looked back at the Governor of New Jersey and asked whether the man who then dealt such smashing blows at intrigue and corruption, could have lost all the qualities which made him so powerful a force.

In New Jersey Wilson carried laws to stop bribery. He fought and defeated in the elections one of the most powerful political "bosses." He restricted the action of the great business Trusts which were dangerous to the liberties of the American people. There were plenty of men in New Jersey and other parts of America who were anxious for reform, anxious that the great American people should stop being cheated and imposed upon by bad politicians. These people supported Wilson in his fight for honesty in politics, and his fame became so great that in 1913 he became President of the United States.

The few years of Wilson's Presidency were the most urgent that the world had known until that time. His part in the story has been told by many, but there is no agreement in their verdict. Time alone will

show. Wilson's friend, Walter Page, soon to be Ambassador in London, went to see him when he became President. He found him, "with a stern look on his face and a lonely look!" "I had the feeling," said Page, "of the man's oppressive loneliness as he faced his great task."

This impression that Wilson gave to his friend was a true one. Wilson was always a lonely man. He had none of the genial friendliness of Franklin Roosevelt, the great President elected in 1932. To many people Wilson seemed cold and aloof, because he was unable to win over men who had not his own high ideals and aims. Unlike a Prime Minister of Great Britain, a President of the United States can act in many directions without consulting Congress and especially in foreign affairs. Sometimes he is apt to lose touch with feeling in Congress and in the country. President Wilson was not very tactful in dealing with Congress. He often made speeches to the rulers of other countries over the heads of his advisers, and in the end Congress threw him over.

II

When the First World War began in 1914, America was in a difficult position because of the very mixed population of this great "melting-pot" of the peoples, and of its millions of German extraction. This caused intense bitterness and division of feeling within the United States. President Wilson has been condemned for not protesting at once when the Germans invaded Belgium; but America was a neutral power, and he was supported in his attitude by his chief opponent, Theodore Roosevelt. Wilson had the greatest dislike of any blustering foreign policy. He believed in arbitration, and one of his first acts was to offer his

services to all the warring nations in the cause of peace. But as time went on, it became more and more difficult for America to keep neutral and out of the war.

"There are two things," said Wilson in one of his speeches, "which everybody who comes to Washington tells me. They tell me 'the people are counting upon you to keep us out of this war,' and in the next breath what do they tell me? 'People are equally counting upon you to maintain the honour of the United States.' Have you reflected that a time might come when I could not do both?"

Throughout the war years, Wilson struggled for peace. At the end of 1916 he asked all the warring nations to state on what terms they would make peace. In January 1917 he spoke to the world of the terms of a lasting settlement, by which the nations were to disarm and peace was to be ensured by a union of nations. "Perhaps," he said, "I am the only person in high authority amongst all the peoples of the world who is at liberty to speak and hold nothing back."

Until Germany's ruthless submarine warfare in 1917, Wilson struggled on, hoping to keep America out of the war. He was afraid, he said, of nothing but failure to do his duty, and the danger to America if she became envious and warlike. "Somebody," he said, "must keep the great stable foundations of the life of nations untouched and undisturbed Somebody must see to it that we stand ready to repair the enormous damage which will ensue from this war."

When America declared war against Germany in April 1917, Wilson, like that other great peace-lover Lincoln, accepted all its consequences. "It is a fearful thing," he said, "to lead this great peaceful people into war But the right is more precious than peace, and we shall fight for the things which we have always

carried nearest our hearts—for democracy, for the rights and liberties of small nations To such a task we can dedicate our lives and our fortunes with the pride of those who know that the day has come when America is privileged to spend her blood and her might for the principle that gave her birth and happiness and the peace which she has treasured. God helping her, she can do no other." These were noble words, but Wilson had many critics, and there were those who thought him weak and wordy, never translating his great ideas into action. Yet he tried with all the strength that was in him to give effect to his ideas, and he decided at the end of the war to go himself to Europe and help to make the kind of Peace Treaty that he felt was so urgently needed.

It was in January 1918, that President Wilson made the speech to Congress in which he laid down his famous Fourteen Points, as conditions of a just peace. It is difficult now to feel again the thrill with which a war-tired Europe listened to his words. It seemed as though above the battlefields the still, small voice of hope and sanity was heard for the first time. President Wilson distrusted the secret agreements, the greed for territory, and the lack of frankness which he saw on the Allied as well as on the German side, and he tried to set down the main foundations of an honourable peace. The Fourteen Points included such problems as reduction of armaments, open and not secret treaties, the freedom of the seas, and the formation of a League of Nations.

Some of the statesmen of Europe resented this action of President Wilson. "What right," they said, "has he to lay down the law to us, when for four terrible years we have borne the brunt of the war?" "Why," said the old Frenchman, Clemenceau, "should

Wilson issue fourteen commandments, when even *le bon Dieu* was content with ten?" This kind of criticism was very common and explains much of the President's unpopularity.

In October 1918, it was to President Wilson that conquered Germany appealed to arrange an Armistice. It was he who questioned the German Government how far they really represented the German people. He welcomed the new German Republic. With high hopes he saw the end of the war in November 1918. But already feeling in America was turning against him. Some wanted Germany to be crushed, others hated the idea of America meddling in Europe's affairs and were afraid of alliances abroad.

In December 1918, the Democrats were defeated at the elections, and Wilson, still President but with a hostile Congress and Senate behind him, decided, unwisely perhaps, but with his usual courage, to go to Paris to attend the Peace Conference. He was greeted in war-weary Europe with delirious enthusiasm. But his mission was in many ways a failure. His secrecy and silence were not popular. He knew little of Europe and her problems, and he was outwitted by more astute men who had each his own axe to grind. But the one great idea for which he sacrificed much was the idea of a League of Nations. And he insisted that the Covenant of the League—pledging its members not to go to war without first submitting their quarrels to the judgment of the League—should become (as it did) a part of all the peace treaties which made up the settlement after the war.

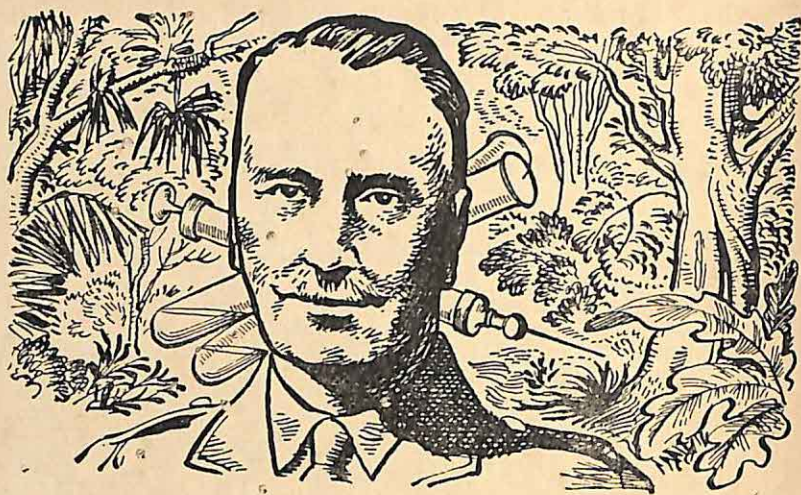
"President Wilson's place in history," it was said, "will be determined by the success or failure of the Covenant." This is a harsh judgment. Time and again in modern history, dreams of a union of nations to

ensure peace have come to men of vision; but a "League of Nations can be no better than the member states of which it is composed."

It is sad to tell of the end of Wilson's career. Ill and over-worked, he returned from Europe to America to face intense hostility to the Peace Treaty and to the Covenant of the League. When the Treaty which included the Covenant was defeated in the American Senate, Wilson's only comment was: "They have shamed us in the eyes of the world." This defeat, which meant that America declined to join the League and so help to heal the wounds of the world, broke Wilson's heart. Although he lived until 1924, he was a broken man, but the vision which he had shared with many others did not perish.

Woodrow Wilson was an outstanding man of the age in which he lived. He fought for and won better government in his State and in his Country. But because he believed that the problem of world government and peace is the greatest problem of mankind, and because he strove most valiantly to solve it, he may well be regarded as one of the world's great pioneers.

Upon one of his successors, Franklin D. Roosevelt, the American people in our own days conferred the great and unique honour of election to a fourth term of office as President. Once again, in a Second World War, the hopes of freedom-loving peoples throughout the world centred on the English-speaking peoples, determined with the other United Nations to plan a new world league for security and peace that we call U.N.O., United Nations Organisation.



XIV

SIR RONALD ROSS (1857-1932)

PIONEER OF TROPICAL MEDICINE

I

By what we have, we lose,
By what we have not, get,
And where we cannot choose,
The crown of life is set.

RONALD ROSS, who wrote these lines, was born in India on 13th May 1857. His father was then a captain in the Indian Army. Three days before his son was born, the great Mutiny broke out. But for the loyalty of the Gurkha soldiers of his regiment, Captain Ross and his wife and baby might all have been murdered by a company of Pandi Artillerymen. Among the earliest things Ronald could remember were the dry hot plains of India, the brilliance of the setting sun, the smell of wet dust and of sandal wood, a great snow mountain at daybreak with one bright star above it. He remembered too a journey with his mother, his little

sister and baby brother in a bullock cart, following his father's regiment. Dimly he could recall his first sight of the towers of Agra and the Taj Mahal—perhaps the most beautiful building in the world, and, after a march which had lasted for months, the minarets of Benares and the great waters of the Ganges with its wide-winged boats.

Ronald and his younger brothers and sisters spent much time with the Indian servants. The children talked with them in Hindustani. Ronald could remember his surprise when he first realized that he talked one language to the Indians and quite a different one to his mother and father. His mother he thought the most wonderful person in the world. She painted flowers and sang duets with his father. She began to teach him to read and write. His father was a stern and just soldier, but he too was a wonderful companion. In his spare time he used to sketch, and Ronald watched him "washing in" the mountains and forest slopes, the lakes and sunsets in brilliant water colour.

By the time he was eight years old, the small boy had to be sent home to England, as the climate was making him delicate and undersized. He was put into the care of an aunt and uncle and they sailed in one of the lovely clippers of those days. The voyage took between four and five months and was full of excitement. People fell overboard and were rescued. Whales spouted on the horizon. Someone caught an albatross. An old sailor made Ronald a full-rigged ship and taught him the name of every spar and sail. At last they reached the coast of England and Ronald went to live at Ryde with another uncle and aunt.

Life in England was as full of interest for Ronald as life in India. His uncle had many books and the boy was soon reading *Robinson Crusoe*, Pope's transla-

tion of Hömer, Shakespeare's *King Lear* and other plays by Elizabethan play writers. His aunt had an aquarium and he was fascinated by its sea-anemones and crabs. He and his friends went for long rambles. They sailed boats, bathed and fished. In the evening after supper, his aunt would read to him. Looking back on those days, he could not remember a single quarrel or jar.

When he was twelve years old, he was sent to a school near Scuthampton. The lessons were dull, but the school had a lovely garden. Young Ross kept lizards and frogs and sometimes a snake. He began to write a book which was to have descriptions of every known kind of animal. He loved mathematics, drawing and painting. He sang glees, played the piano and worked out some of the laws of harmony for himself. He played football and cricket, though not very well.

By the time he was seventeen, Ross had decided that he would like to be an artist. Failing that, he would be a soldier or a sailor. Then he could travel to sunny lands—away from the mists and chills of England. But his father had other plans for his eldest son. He wanted him to be a doctor in the Indian army. So Ross went as a medical student to St. Bartholomew's Hospital in London. He was not much interested in his work, and spent a good deal of time writing poetry and composing music. As time went on, however, he found one thing very interesting. He was working in a hospital under a young surgeon who was using the new methods of Dr. Lister. Some of the other doctors scoffed at the sterilized and carbolized dressings, but in a fortnight Ross had seen the difference the new methods made in the recovery of the patients.

Life was so full of other interests that Ross had a way of leaving the work for his examinations to the last minute. So it came about that he failed to qualify for the Indian medical service before his father retired. He was determined now to earn his own living. He took a post as ship's surgeon on a steamship plying between London and America. She was a cramped little ship, and very slow compared with the great liners of to-day. Each voyage took from two to three weeks according to the weather. Going out she carried saloon passengers and emigrants, and the young doctor was busy caring for these and for the crew. But on the return voyage, she brought mainly sheep and cattle and Ross had time to shut himself up in his tiny cabin and work for his examination.

At length in 1881 he qualified and returned to India after an absence of sixteen years. An army doctor in India in peace time had not a great deal of medical work to do, but Ross was never idle. He read Greek and Latin, Italian, French and German. He wrote verses. He tramped about the country-side. He fished. He played tennis and polo. He studied mathematics and astronomy. He played the piano. Above all, and all the time, he watched the Indian people. He saw how poor many of them were, and what hurt him even more, how ill, and no one seemed to care.

By and by this energetic life in the stifling heat of India began to make him ill, and as is often the way, because he was ill he was very depressed. Should he give up being a doctor? But always the vision of dying Indian women, and sickly children, came back to him. He knew that many of them were ill with malaria, a fever which is specially frequent in tropical countries. He knew that many children get ill with

it soon after they are born and are attacked again and again. Thus they grow weak and thin, and cannot resist other diseases such as pneumonia. What was he doing with his medical knowledge to rid the world of suffering such as this?

A holiday in England did him good. When he returned to India in 1890, he began to try to discover the cause of malaria. After a time he heard of the work of a French doctor, Charles Laveran. He was told that the Frenchman believed he had discovered tiny living creatures, parasites, called plasmodia, in the bloodstream of malaria patients. It was these he said which, at a certain stage of their growth, caused the fever of malaria. Ross ordered Dr. Laveran's books, but he could find no trace of the plasmodia in the blood of his patients.

Next time he was in England, he went to see one of the Professors at St. Bartholomew's and asked him what he thought of the French doctor's theories. He replied that they were correct and told him to go to see Dr. Patrick Manson who had been working for years in China. It was on an April day in 1894 that Ross called at Dr. Manson's house in London. When he heard what Ross wanted he showed him, under a microscope, a specimen of blood taken from a patient with malaria. There on the slide were tiny crescent-shaped bodies which both knew were not present in healthy blood. They were the plasmodia. Laveran was right. But how did the parasites get into the blood? And how were they carried from a sick person to infect a healthy one? If only these two facts could be discovered, perhaps malaria could be prevented. That would bring better health to millions of men, women and children in India and tropical Africa and the Far East.

Ross was determined to make these discoveries if he could and Manson would help him. One day in the following November they were walking together in Oxford Street. Manson said to Ross, "Do you know I have formed the theory that mosquitoes carry malaria?" Ross said he had read the same theory in one of Dr. Laveran's books, but he had not thought it correct. Manson now gave him good reasons for thinking it might be. Ross determined that as soon as he got back to the malaria-haunted regions of India, he would put the theory to the test.

II

On March 28th 1895 Ross sailed for India once more. Before starting he had invented a small portable microscope which he could sling over his shoulder. So eager was he to begin his work on malaria that he got out his microscope on the liner and persuaded the passengers, to their great amusement, to let him prick their fingers to examine the blood. But not one of them had malaria. Touching at Malta, he nearly got left behind hunting for malaria cases in the hospitals. On 25th April he joined his regiment at Secunderabad in the Deccan, and for the next four years every moment that he could spare from his army work was given to the search.

The first thing he had to do was to discover the plasmodia in a mosquito. This meant comparing the parasites in the blood of malaria patients with any parasites he could find in the stomach of mosquitoes. He had to bribe his Indian patients to have their fingers pricked. Sometimes they took the bribe and then were so frightened they ran away. Moreover there are many different kinds of mosquitoes, and each kind harbours many different parasites. Every

kind Ross could find had to be dissected, and every cell of its tiny stomach examined under the lens. Ross worked from 7 o'clock in the morning to 7.30 at night. His eyes were swollen with fatigue. He tried breeding mosquitoes from grubs, but he left the bottle in the sun and the grubs died. He got natives to catch mosquitoes for him, but for some time he could not discover how to make them bite his patients.

Manson had suggested to him that perhaps the infection was carried by drinking water in which mosquitoes had been drowned. He persuaded a native to drink such water, and at another time drank some himself, but neither of them fell ill. He had been at this work for six months when he was sent for to deal with an outbreak of cholera at Bangalore. He was unable to give much time to his study of malaria again for over a year.

No sooner was Ross released from his work at Bangalore than he took a holiday by going off into a jungle region to look for the malaria mosquito. Here he soon had a sharp attack of the disease himself. He watched his own symptoms with great interest and tried to trace how he had been infected. Again he suspected water, but was wrong. He must really have been bitten by a single mosquito in a rest-house in which he spent some hours. It was a small creature with brown and white wings and rested with its tail at an angle to the wall. Ross had never seen it before. Actually it was an example of the very mosquito which three months later he convicted of harbouring the malaria plasmodia. Ross was feeling ill and depressed.

But now he had to rejoin his regiment at Secunderabad. It was in these circumstances that he wrote the verse at the beginning of this story.

Now began two months of work under almost impossible conditions. The monsoon was delayed and there was no rain. The heat was overpowering. His little office at the hospital was full of tiny flies which got into his eyes and ears as he pored over his work. He could not use a punka (fan) to cool the room, because the draught blew his specimens about. The screws of his microscope were rusty with moisture from his sweating hands and face. Its last eyepiece was cracked and there was no means of getting a new one. Yet he toiled on. He employed natives to hunt for fresh species of mosquitoes for him.

On 15th August his assistant pointed out a small insect sitting on the wall of the office. It held its tail up and had three dark bars on its wings. Ross caught and bottled it. He saw that it was the same species as the one he had noted in the jungle. The next day some more of the same species hatched out in a bottle where he had been breeding grubs. One of his patients, Hussein Khan, allowed himself to be bitten by these creatures. Then Ross spent three days dissecting without result. On 20th August he made three more dissections. Still nothing. He was tired. There was still the stomach of the last mosquito but one to dissect. But what was the use? He had dissected the stomachs of thousands of mosquitoes and found nothing.

"But," he wrote later, "the Angel of Fate fortunately laid his hands on my head and I had scarcely commenced to search again when I saw a clear and almost perfectly circular outline The outline was much too sharp, the cell too small to be an ordinary stomach-cell of a mosquito I counted twelve of the cells." In each of the cells was the black pigment

which Dr. Manson had shown him in London. "Then I made rough drawings of nine of the cells, scribbled my notes, sealed my specimen, went home to tea (about 3 p.m.) and slept solidly for an hour." When he awoke feeling refreshed, he knew that the next stage of his problem was solved. He knew that what he had found was a stage in the life of the malaria plasmodium, embedded in the stomach of the brindled anopheles mosquito. Ever after, he called 20th August *Mosquito Day*.

The next day, in intense excitement, he dissected his last mosquito. There were the cells again, but much larger. They were growing inside the mosquito's stomach! Now if only he could discover how the plasmodia were carried from the mosquito to a fresh patient, he would have solved the problem of the spread of malaria. He felt sure he could complete his work in a few weeks. He meant to wire his news to Dr. Manson as soon as the discovery was complete. But it was he who received a wire. It summoned him to work at a new station—a pleasant healthy place where there was no malaria!

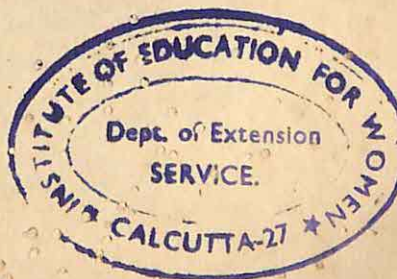
It was not until nearly a year later that Ross was able to solve his last problem. Then it was that he discovered that the plasmodia develop in the body of the mosquito into numbers of little black threads which pass into the insect's salivary gland. Thus when the mosquito bites a human being, the black threads pass into the bloodstream and a fresh patient becomes infected with malaria. This particular type of mosquito—the anopheles—breeds in open streams and marshes in hot countries. If, then, the grubs in the streams can be destroyed, the district can be freed from malaria and much human suffering prevented. Ross proved this to the British army in Italy and

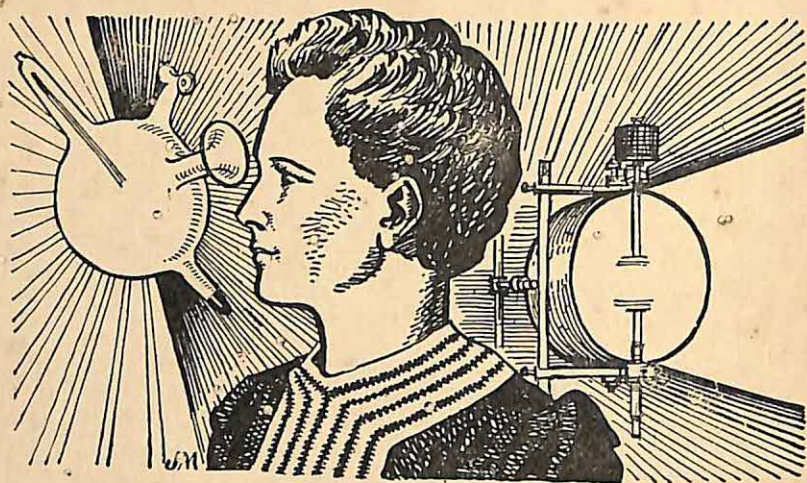
Greece in the war of 1914-1918 and saved the lives and health of many soldiers.

When Ross was a boy of twelve a Frenchman named Ferdinand de Lesseps tried to cut a canal through the isthmus of Panama. He failed. Of the five hundred young Frenchmen he had taken with him, not one lived to draw his first month's pay. They had all died from malaria and yellow fever, another disease carried by mosquitoes. In 1903 an American doctor, named Gorgas, who had been working on Ross's discoveries, was summoned to Washington and asked whether he could rid the isthmus of these plagues. He did. Panama became one of the healthiest regions in America and in due course the canal was cut.

By this time people in both the New World and the Old had begun to realize the greatness of the work Ross had done. Medical and scientific societies in many countries showered honours upon him. In 1902 the Swedes awarded him the Nobel Prize for Medicine. In 1911 King George V made him a Knight Companion of the Bath and in 1926 the Ross Institute was founded at Putney Heath for the study of tropical diseases. Yet it remains true that even to-day men have not used this great discovery as they might. Thus many people still die unnecessarily from malaria and yellow fever because not enough money is spent on draining the marshes and streams where anopheles breeds.

Malaria was once the most widespread of tropical diseases, and of Sir Ronald Ross, physician and poet, it was said, he "made one quarter of the globe habitable."





XV

MARIE CURIE (1867-1934)

DISCOVERER OF RADIUM

IN THE summer of 1871 a family of Polish children, a boy and four girls, stayed with their parents, M. and Mme. Sklodovska, on a farm belonging to their cousins. They made mud pies and climbed trees, in whose branches they kept stores of gooseberries, cherries and raw carrots wrapped in cabbage leaves. But the long summer days could not be given only to play. Bronya, aged seven, was learning to read. Tired of arranging and re-arranging her cardboard letters by herself, she would sometimes get her little sister Marya to be her pupil in a game of school. Marya was only four, but she liked this new game and played it as earnestly as she did everything else.

One day she was in the room when Bronya was having a reading lesson with her mother and father. Bronya was not a stupid child, but at seven years old

she was not much interested in reading. She stumbled over the words of her reading-book. Suddenly little Marya took the book out of her hands and read the first sentence without a mistake. When she looked up excitedly from the book, her mother and father gazed at her in silent astonishment. They were afraid their baby was going to be precocious and conceited. Bronya too, instead of being proud of her pupil, was looking at her with a sulky stare on her fair dimpled face. Poor Marya began to cry, "Pardon, pardon," she sobbed, "I didn't do it on purpose. It's not my fault, it's not Bronya's fault! It's only because it was so easy!"

Fifty years later Marya was elected a member of the Academy of Medicine in Paris. When the President of the Academy welcomed her, he said, "We salute in you a great scientist, a great-hearted woman who has lived only through devotion to work a patriot who, in war as in peace, has always done more than your duty."

Between the time when she learnt to read and the day when, as Mme. Marie Curie, she became a member of the French Academy of Medicine, Marya Sklodovska's life was full of sadness, but also of wonderful adventure. Until the year 1918 her country, Poland, did not regain its independence. It had been partitioned three times by the end of the eighteenth century and Warsaw, where her parents lived, was ruled by the Czar of Russia. Her father was a schoolmaster, but he was not free to teach as he liked. In one wing of the school lived a Russian inspector who would report him if he taught his boys to love their country or to use their own Polish language.

When Marya was ten years old she herself went to school. Her class teacher was a Pole, and taught the

children Polish history in Polish. If a bell in the corridor warned them that an inspector had come, the Polish books had quickly to be cleared and Marya, as the surest child in the class, would be chosen to answer questions about Russia, to give the titles of the Czar and the names of the Imperial family.

Without a single mistake she played her part, but when the inspector had gone and her teacher kissed her, she burst into tears. Two years later her father was turned out of his house in the school buildings and had to move with his delicate wife and his son and little daughters from their pleasant home into a much smaller house. He had less money and had to take schoolboys to board with him. The little girls had to sleep and work in the dining-room. Soon their mother died, and they were left to the care of a housekeeper and of their father in such time as he could spare from his work.

When she was fourteen Marya went to the Gymnasium or, as we should say, Grammar School. There she was the brightest of all the girls, and when she left at the age of sixteen she won the school gold medal. She and her sister Bronya both longed to go to Paris to study at the University, but there was no money to pay for this. Marya decided that she would take a post as a governess and save every penny she could so that she might help Bronya to go.

In the quiet village where she was teaching, Marya found peasant children who could neither read nor write. In her spare time she opened a little class for them in her bare room. At first ten, then as many as eighteen, tow-haired children used to come in by a back door and shuffle with their bare feet up the carpetless stair. Round the scrubbed deal table, seven or eight at a time, they struggled to learn to

read and write in Polish. If their young teacher had been discovered by the Russian inspectors, she would have been sent to prison in Siberia.

All this time Marya herself was dreaming of the day when she might perhaps be able to join Bronya in Paris and begin her own studies once more. At last in 1890 a letter came from Bronya. She had nearly finished qualifying as a doctor. She was engaged and hoping to be married to a young man who was also about to become a doctor. Marya must save up and next year come to Paris and begin her studies, and live with her sister and brother-in-law. But family duties caused her to turn her back on the wonderful suggestion. For more than a year she lived with her father in Warsaw, giving lessons. At the end of a courtyard planted with lilacs was a tiny building. Over the door hung the name "The Museum of Industry and Agriculture." It was directed by one of Marya's cousins. Inside were test tubes, balances and electrometers. There, by herself in the evenings, Marya began to make experiments in science. She knew she had found the work she really wanted to do. Now she *must* go to Paris.

She packed up her mattress, her sheets and towels. In the big brown wooden trunk with M.S. painted on the lid, she packed her stout linen underclothes, her dark dresses, her shoes, her two hats. On the station she flung her arms round her father "I shall not be away long," she cried; "two years, three years at the longest. As soon as I have finished my studies, and passed a few examinations, I'll come back and we shall live together and never be separated again." "Yes, my little Manyusya," murmured her father a little sadly, "Come back, quickly. Work hard. Good luck."

It was a wonderful moment to Marya when she at last stood in the streets of Paris. For the first time in her life she was amongst people who could talk freely the language they wanted to speak. The bookstalls too were free to sell books in any language and on any subject. There were no secret police, no inspectors to punish the teachers and students of Paris if they spoke French or learnt the history of France. For a little while she lived with her sister and brother-in-law, but the fun and festivities in their house in the evenings gave her too little time for her work.

She moved into an attic by herself. Marya, or Marie as her French companions called her, did all her own cooking and cleaning. Often she had hardly anything to eat. Sometimes she fainted because she was so tired and hungry. So she lived for four years. She won a scholarship which helped her to go on paying her fees and her rent. She sat for her Master's degree in science (M.Sc.) and came out first of the thirty candidates.

Then one day, at tea in the house of a friend, she met a tall young man, one of the cleverest French scientists of the day. His name was Pierre Curie. They began to work together and to see each other often. Pierre asked Marie to be his wife. For a long time she refused. She could not bear never to live in Poland again with her father. At last in the summer of 1895, she could refuse him no longer. They were married and spent their honeymoon exploring France on their bicycles. They took a little flat. Marie cooked and shopped in the early morning. Then she went to the University and worked for eight hours at her scientific experiments.

II

Soon she and Pierre planned that she must take her doctor's degree. For this she must write a long essay on some scientific discovery which she herself had made. She had read of the work of a great Frenchman, M. Henri Becquerel. He had discovered that a metal containing an element called uranium, if wrapped in black paper, would make a mark through the paper on a photographic plate. If it was in the same room with an instrument for measuring the presence of electricity, it would make it move without any other conductor than the air. Nobody knew what it was in the uranium which did these wonderful things. Marie and Pierre were fascinated by it. Marie determined to try to find out and to write about it for her doctorate.

There was nowhere for her to work but a damp shed which was used as a lumber room. Here she had to set up her scientific instruments. The damp and the bitter winter cold were very bad for the instruments and for Marie. By and by she began to wonder whether these mysterious rays were only to be found in uranium. She soon found that they were present in another element, thorium. Next she realized that the *radio activity*, as she called the action of the rays, was much stronger than she had expected. There was not enough uranium or thorium in her specimens to cause such strong reaction. She made a wonderful guess. Could there possibly be a radio-active element in her minerals which no one had ever discovered before?

At every point Pierre advised and helped her. Soon they were sure that the new element existed. They called it *radium*, but they still had to find it. They knew it would be found, if anywhere, in an ore called

pitch-blende which was used in Bohemia for the making of glass. The glass-makers needed the uranium in the pitch-blende for their manufacture. When they had extracted it, the rest was thrown out on to a slag-heap. The Curies could not have afforded to buy pitch-blende with the precious uranium in it, but they could afford tons of this waste matter from the glass factory. They ordered it. One morning a heavy wagon drew up outside their working shed. Sacks were unloaded. Marie in excitement cut the strings and plunged in her hands. Here at last was the material she wanted for her experiment, dull and brown and full of pine-needles from the forests of Bohemia.

Now Pierre and Marie set to work in their miserable shed. For four years, from 1898 to 1902, Marie in her smoke-stained working smock stood in the courtyard, melting down the metal, surrounded by bitter smoke. Pierre in the shed was busy with other experiments. As weeks and months passed and the radium was still not found, Pierre urged Marie to give up her exhausting search. But it was not in Marie's nature ever to give up. Day by day she got nearer to her result. One night she and Pierre returned home to their flat feeling restless. They knew their discovery was nearly made. Marie bathed her baby Irène, put her to bed, and sat brooding over the cradle for a while. Then she went down to Pierre and picked up the pinafore she was making for Irène, but she could not settle to it. Suddenly she got up. "Suppose we go down there for a moment?" she said.

Pierre knew at once what she meant. Arm in arm they walked almost silently through the dark streets. When they came to the door of the shed, Pierre put the key in the lock. Inside, they knew their little

glass tubes were waiting, standing in rows on rough shelves. Would anything new have happened since they left the shed? The door squeaked as Pierre pushed it open. "Do not light the lamp," whispered Marie as they slipped inside. There, there it was, shimmering in the darkness from the little test tubes, a lovely, mysterious, phosphorescent light. *Radium* was found.

Up to this time many scientists had not believed in the existence of radium. Now that Marie could take them into an unlighted shed and show them her new element, shining like a glow-worm in the dark, they were convinced. Soon surprising discoveries were made about what radium could do. Its rays could go through any substance except a thick screen of lead. It could give off enough heat in an hour to melt its own weight in ice. It coloured the glass receivers in which it was contained, and little by little reduced to powder any paper or cotton wool in which it was wrapt. At length, most wonderful of all, certain German and French doctors discovered that the burning properties of radium could help them in the cure of certain kinds of deadly disease. If Pierre and Marie Curie had chosen to claim that the discovery of radium gave them alone the right to produce it or to have it produced, they might have become very rich. But this they would not do.

And now at last in 1903 Mme. Curie had time to collect the results of her work and present herself for the doctor's degree. After that, for three years she and her husband worked together. Then one wet day in the streets of Paris, Pierre Curie was knocked down by a heavy dray and killed. Marie worked on alone. She could not bear anyone to see her grief, but her face was worn, her fine hands twitched. But by now

she had become famous. She could not escape from the people who admired her.

The Universities of Europe gave her honours. Sweden presented her with the Nobel Prize for Chemistry, one of the greatest honours a scientist can receive. In Paris two great scientific societies decided to join together to build her a beautiful laboratory to be called the *Institute of Radium*. In one wing Mme. Curie could work with her assistants and pupils. In another close by, doctors could experiment in and practise the cure of disease with radium. And so wonderful days began again for Marie. Before the foundations of her laboratory were finished, she had begun to make the garden. She chose plane trees and lime trees. She planted rambler roses and watered them every day.

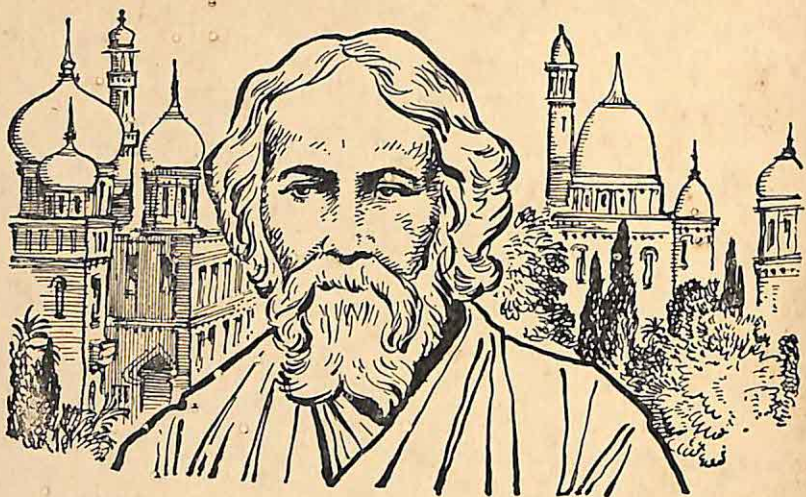
In July 1914 the new building was finished. Marie's wing was called the Pavillon Curie. The road which led to it was called the Rue Pierre Curie. The sun streamed in through the great windows. The benches and cupboards, the scientific instruments were all in place.

On 2nd August 1914 Germany invaded Belgium, and France was plunged into war. There was no possibility now of working quietly with her students in Paris. But almost at once Madame Curie knew what she would do. Even before the discovery of radium, it had been found that those other rays, which scientists call X-rays, can pass through the skin and flesh of the human body and enable doctors to take photographs of the muscle and bones. Now was the moment when X-ray photography was specially needed. With its help, surgeons could see where bullets and shrapnel had buried themselves in wounded men. This would make operation and cure much easier. But French military hospitals had no X-ray

departments. Mme. Curie collected all the X-ray apparatus she could. She equipped a car and was soon ready to drive to the base hospitals all over France, to take the X-ray photographs herself, and to find a room in hospitals suitable for a permanent X-ray department.

Before the end of the war she had equipped two hundred of these rooms, and more than a million French soldiers had been treated in them. She helped in the same work for the Belgian and Italian armies. In November 1918 came the end of the war, and by the peace treaty Poland once more became a free country. Four times in the following year Mme. Curie visited her old home. She went not only to see her brother and sisters once more, but to help to raise money to build an Institute of Radium in Warsaw. Poland was a very poor country. It took several years to collect the money. Mme. Curie even travelled to America to ask friends there to help her. At last on 29th May 1932 she returned, for the last time, to the city where she was born for the ceremonial opening of the Radium Institute of Warsaw. Two years later she died.

“ Marie Curie is, of all celebrated beings, the only one whom fame has not corrupted,” was the tribute of another great scientist.



XVI

TAGORE (1861-1941)

A GREAT INDIAN

ONE of the greatest of the sons of modern India was Rabindranath Tagore, poet, author, religious preacher, social reformer, artist and musician. This great man, representing all that is best in Indian thought and character, did much to make his people more truly understood by the Western World.

Tagore was born in 1861, four years after the tragedy of the Mutiny had threatened to wreck British influence in India. At that time, nearly a hundred years ago, modern Western inventions had barely gained a foothold in India; railways were in their infancy, and machinery was regarded with suspicion. The superstitious dread of losing caste by crossing the ocean kept all but a few daring spirits at home, so the Indian knew little of any land but his own. But the work of mission schools had begun to arouse a

desire for education, and the first Indian universities had just been founded at Calcutta, Madras and Bombay.

Tagore's father was a Bengali land-owner, a remarkable man, who earned from his fellow countrymen, during his lifetime, the title of Maharshi ("Great Seer"). He revived a Bengali religious society, provided it with a printing-press and made it possible to issue a monthly magazine. The society included many men of great ability and noble character, and it was from Bengal that the "Great Awakening" swept over India in the late nineteenth century, just as the "New Learning" or Renaissance had spread from Italy over Europe in the sixteenth century. This society teaches that there is one Supreme Being, and its members believe that the root principles of their religion and all other true religions are the same.

In this atmosphere of culture and religion, Tagore and his brothers grew up, free from the superstitions which enslaved so many of their countrymen. One brother was the first Indian to enter the Indian Civil Service. Another, a noble character, was not only an artist whose work aroused the admiration of one of the leading British art critics, but also a man of wide interests and boundless energy, a promoter of river-steamers, a pioneer of social reforms, a man who poured out money for his various ventures so freely that he himself was poor. Yet another brother was a poet, and lived to a great age, honoured and revered by all India.

Such was the highly cultured family to which Tagore belonged. He himself managed his father's estate from the age of twenty-four, and already he had attracted much attention on account of his ability and high ideals. During the eighteen-nineties he

founded a magazine, the finest periodical Bengal had ever known, and through its pages he guided his people towards the achievement of true nationalism.

He was a deeply religious man, and in one of his lectures he told of the visions he had had when he was eighteen years old when he stood watching the sun rise, and again when he stood on a verandah looking down on the people in the street below. He then knew that he had at last found his religion; it was a vision of the Infinite, coming close to him in the guise of his fellow men, appealing for his love and compassion. He must seek it in service and suffering.

"Whom Thou givest Thy banner, Thou givest the strength to carry it. Thou givest him love that he may be able to bear the strain of Thy service. I therefore desire with all my heart that I may be liberated from suffering by suffering. I do not desire to achieve salvation by avoiding the pain which is the gift of Thy hand."

Tagore was convinced of the need of education for his people, and in 1900 he left his country home at Sheleida, on the Ganges delta, and moved to the "Abode of Peace" on the drier uplands. There he founded his famous school which became an international institute and is now a university as well as an agricultural training college, known the world over. He returned occasionally to his beloved retreat "among the wild ducks" at Sheleida, to seek a short rest from his many labours. He had many interests besides his education and literary work. He made pioneer efforts for the betterment of Indian village life, and worked for the removal of such blots on Indian society as child-marriage and the treatment of the "Untouchables," the lowest of the Hindu castes.

Tagore had a great love for, and understanding of, the country people of India, and felt (much as Chaucer

did in our country six hundred years earlier) that the common speech should be the foundation of all good writing. "Only by following the stream of one's mother tongue," he once said, "can one get to the sea of universal human culture." At the same time he longed to widen that stream, and to free his people from the narrow-mindedness of Bengali society. He wrote for his own people in the Bengali tongue, and only those who can read and speak Bengali can fully appreciate the beauty, grace and lyrical richness of his poems, plays and novels. Until he was fifty he rarely used English in his literary work, but he had mastered that language, and made good use of it in some of his later prose writings.

Tagore's fiftieth birthday was marked by a great reception in the Town Hall of Calcutta, when enthusiastic tribute was paid to his work. Two years later he visited England and Europe, taking, it has been said, "the Indian spirit on pilgrimage through the world." He made the tour for two reasons: his health was being broken down by his great and ceaseless literary and social activities; and he needed money for his college. This money could be obtained by lectures and the increased sale of his books.

On this occasion he prepared his first English translation of one of his works "Song Offerings". This was published by the India Society, with a foreword by Yeats, the Irish poet. This volume brought him world-wide fame. Tagore's works often suffered by translation, for he feared that English readers would not understand what was strange to them. He therefore cut out or toned down much that was gripping and powerful because it was too peculiarly Indian. Later he himself bitterly regretted what he termed "the falsification of his own coinage."

His tour was not confined to Europe, for he also visited China, Japan and Persia, and was everywhere received with the respect due to so noble an ambassador of the Indian people. Various governments gave him official receptions, and planes were placed at his disposal. While in Europe he received the much coveted Nobel Prize for literature, and used the money for the upkeep of his school. In 1915 he was knighted by the King of England.

Tagore was a thinker ahead of his time. In 1916 he published his book "Nationalism," in which he showed clearly the dangers of a cult that brought about the most destructive wars in the history of the world. Moreover, he foresaw long ago the menacing effect that machines would have upon beauty and individuality. He was aware of the deep differences between the Western world and his own; he saw that the main concern of the former was to extend itself outwardly, while the spirit of the East is more inclined to turn inward in meditation, neglecting the outward things of progress and commerce.

While fully aware of the faults and flaws in Western civilization with its highly mechanized methods, Tagore, unlike Gandhi, did not despair of the possibility of some kind of compromise between East and West. He felt that each may have something to bring to and receive from the other to their mutual advantage.

With all his passionate patriotism and his love for his own people, Tagore felt a great affection for England, and was ever the constant friend of our country. At a time, in 1921, when India was passing through bitter and dark days, he wrote: "I cannot help loving England, which has given me some of my

dearest friends. I am intensely glad that it is so, for it is hateful to hate."

Tagore was at his best as a lyrical poet. He also wrote plays and novels. His short stories are perhaps his finest work, dealing as they do with touching human experiences and the moods of nature. His novel, *Gora*, picturing the struggle between old and new in Calcutta society, is the greatest work of fiction modern India has yet produced. He was interested "in politics only in so far as it concerns the deeper life of India, and he desired that the national movement in India should consider social reforms before political freedom. By his abundant writings, which are permeated by a sense of the beauty of the universe, by a love of children and of simplicity, and by a consciousness of God, Tagore did much to interpret for the West the more serious reflections of the people of Bengal."

Tagore died in 1941 at the age of eighty. He has very truly been called "the Mediator between East and West," and his death was mourned in India and throughout the English-speaking world. The world lost a poet of great charm, and a man of fine character, unselfish and sincere, who left an empty place that will not soon be filled. Such a man comes to a nation only once in many centuries.



XVII

DAVID LLOYD GEORGE (1863-1945)

ARCHITECT OF VICTORY IN THE FIRST WORLD WAR

DAVID LLOYD GEORGE was one of the leading British statesmen during the early part of the 20th century. He was born in Manchester on January 17th 1863. His father was a Pembrokeshire man of farming stock, who left the land to become a schoolmaster. When David was a few months old, his father gave up school-teaching, and took a small-holding, but before David was two years old his father died.

On her husband's death Mrs. George and her two little boys made their home with her brother, Richard Lloyd, a shoemaker and a local preacher, in the Welsh village of Llanystumdwy, Carnarvonshire, within sight of the peaks of Snowdon. David spent his boyhood in that little village of sturdy stone cottages, attending the village school, and breathing in the spirit of Welsh nationalism and a pride in the traditions of

Welsh culture. He acquired the sturdy independence of the peasant, and learned, no doubt from his uncle, the sympathy and understanding which made him in due course the champion of the poor, and placed him instinctively on the side of the small nation and of the under-dog.

Even as a pupil in the village school, David Lloyd George (as he came to be called) was very clever, and his uncle decided he must enter a profession and become a lawyer. But before he could be articled (or apprenticed) to a lawyer, he must pass a preliminary examination which included, among other subjects, French and Latin, neither of which was taught in the village school. In those days there were no correspondence courses and other aids for isolated students. But David's uncle bought the necessary books, and learnt both languages himself in order to coach his nephew. David passed his examination and was articled to a firm of solicitors in Portmadoc. During the following year, the family removed to the neighbouring seaport of Criccieth.

Working hard at his studies, David became qualified as a solicitor at the early age of twenty-one. His firm offered him a good position, but he preferred to work up a practice for himself. He was much in demand among the country folk, especially small farmers and quarrymen, and poachers and others who were in trouble. He became a notable speaker both in court and on the platform, and in 1886 he organized a local Farmers' Union. Three years later he was chosen one of the aldermen of the newly-formed County Council.

Then a law case brought him wider fame. An old quarryman, a Methodist, died. He had expressed a wish to be buried in the churchyard beside his

daughter's grave. The local clergyman refused permission. Lloyd George was consulted, and declared that the clergyman was acting beyond his rights ; the churchyard should be entered " by force if necessary," and the old man's wish should be carried out. This was done. When the clergyman took the case to court, Lloyd George was engaged for the defence, and won the verdict.

About this time (1890), Lloyd George entered the field of politics. The sudden death of the Conservative member for Carnarvon Boroughs led to a by-election, and the popular young lawyer became the Liberal candidate to oppose Ellis Nanney, the squire of Llanystumdwy. It was an exciting contest, but the young Liberal won the election. Time after time, Lloyd George had to fight for his seat, but he always won, and continued to sit as M.P. for Carnarvon Boroughs almost until the end of his life.

At the beginning of his parliamentary career, Lloyd George was a Welsh Nationalist rather than a Liberal. He was often in fierce conflict with older statesmen, including Joseph Chamberlain. For ten years he tried to get the Welsh Liberals to unite and demand Home Rule for Wales, but he failed to heal the age-long rift between North Wales and South Wales.

In 1899 war broke out between Britons and Boers in South Africa. Lloyd George sympathised as a member of one small nation with the people of another small nation, and he thought the British had forced war upon the Boers, and therefore opposed it. This made him for a time the most unpopular man in Britain. When he was addressing a meeting in Birmingham Town Hall, a riot broke out. The police, fearful for his safety, insisted on disguising him as a constable before they would let him leave the hall.

Yet in spite of these and other attacks, his fearless courage and brilliant oratory won him a high place in political circles.

In the years following the Boer War, when the Liberal Party came into power, Lloyd George entered the foremost ranks of British statesmen, becoming President of the Board of Trade and a Privy Councillor. At the Board of Trade he proved a wise administrator, and made several important reforms, including a *Workmen's Compensation Act* (1906) which compelled employers to compensate their workpeople for injuries received by accident in the course of their employment.

His appointment as Chancellor of the Exchequer, under the Premiership of Mr. Asquith (1908), was the beginning of a great period of social reforms. The first step was a modest scheme of *Old Age Pensions*—5/- a week for old people over seventy, and 7s. 6d. for an aged married couple. From this small beginning, Old Age Pensions have been considerably increased. In the same year a Bill was passed which limited work in coal-mines to eight hours a day.

Next Lloyd George prepared his "*People's Budget*" (1909), which has been described as the most revolutionary series of financial proposals ever presented to a British Parliament. The Budget asked for a revenue of £200 million (a larger sum than had up to that time ever been demanded, even during wars), and the greater part of the money was to be spent on social services. The money was to be raised by increased taxation on the rich, especially on land values, coal royalties and other large profits. Another feature of this Budget was the creation of the *Road Fund*, a notable act of foresight which greatly helped to develop our motor roads and transport.

The Budget raised a storm of indignation among the wealthier classes. Lloyd George travelled about the country, making speeches in defence of his proposals. The House of Lords, contrary to their usual practice, refused to pass the Budget; the Government resigned and a General Election took place in January 1910. The Liberals retained their position, but with a reduced majority, and brought forward a *Parliament Bill* which (when passed) made it illegal for the House of Lords to reject any money Bill (such as the Budget) which had been passed by the Commons. The Bill also limited the power of the Upper House in respect to other Bills passed by the Commons; such Bills might be suspended, or delayed, for two years, but at the end of that time they were to become law in spite of the veto of the Lords.

A second general election again went in favour of the Liberals; in 1911 the Parliament Act was passed, and the taxes imposed in 1909 came into force. In the same year the grant of a salary of £400 a year was made to all M.Ps., and this made it possible for working men to enter Parliament without outside help.

During a compulsory rest after two election campaigns in one year, Lloyd George began to work out plans for a *Health Insurance Scheme*. This type of insurance had already been introduced by Bismarck in Germany, and Lloyd George had studied the German insurance system while on a holiday in Central Europe in 1908. A compulsory Insurance Scheme was something new to the British public, and at first the idea was very unpopular. But by a series of conferences, and a combination of firmness and concessions, Lloyd George succeeded in pushing his Insurance Bill through the Commons. The Lords, tired of conflict

with the Commons, let it pass with few amendments. The Act enforced contributory payments by both employers and workers (earning less than £160 a year); in return workers were to receive sick-pay and free medical treatment. The Health Insurance Act was followed by an *Unemployment Insurance Scheme* on the same lines, and in due time this was extended to practically all trades. This scheme did much to carry the country through the dark days of unemployment which followed the First World War.

Any doubts as to Lloyd George's whole-hearted patriotism that may have survived from the time of the Boer War were swept away by a speech he made in the Mansion House in July, 1911, in which he "shook the mailed fist at Germany," just embarking on aggression in North Africa. The occasion was the menacing appearance of a German battleship off the Moroccan port of Agadir. Lloyd George made it plain that Britain would not be ignored, and his grave warning called a halt—for a time—to German pretensions and challenge to French interests.

Lloyd George next set to work on a *Land Inquiry* with the purpose of restoring British agriculture in rural districts, and clearing the slums in towns. But his plans were interrupted by the approach of the First World War.

In this first period of his political career (1905-1914), Lloyd George had proved himself an able politician, a convincing orator, and a keen social reformer. In the second period (1914-18) he showed great ability as a war minister and statesman. At first he was not in favour of Britain joining in the war, but the invasion of Belgium by German forces in complete defiance of treaties made him change his opinion.

Lloyd George was a man of action; having decided

in favour of the war, he took active steps towards winning it. As Chancellor of the Exchequer, he proclaimed a moratorium (that is, a temporary suspension of payments by banks), thus avoiding a financial panic in the early days of the war. His later arrangements placed Britain on a firm monetary basis, and won the confidence of many business men in London and elsewhere who had previously been his bitterest foes.

In June 1915 a new Ministry was set up—the Ministry of Munitions. Lord Kitchener, as Minister of War, was calling for two million recruits, and the government workshops at Woolwich and elsewhere were quite unable to supply the new armies with the needful weapons. There were also alarming reports of serious lack of shells and other munitions for our troops at the front. Lloyd George had already made arrangements for getting arms from America, and he seemed the right man to organize the new Ministry. When a Coalition Government of the two main political parties was formed, he agreed to give up his post as Chancellor of the Exchequer—the highest office after that of Premier—in order to undertake this difficult task.

He now put forth all his powers for making people work. He called upon private armament firms to make a new and gigantic effort. But this was not enough. He created a vast network of new factories and workshops, and rallied to the task a huge army of men and women. In a few months the country's industry was swung over to war production. Shells, heavy artillery and machine guns were pouring out of Britain to our armies in the field. There was also an increasing supply of grenades, trench mortars and other equipment necessary for the conduct of a war constantly demanding new types of weapons.

In June 1916 the sinking of H.M.S. *Hampshire* (by a German submarine) resulted in the death of Lord Kitchener; the office of War Minister thus became vacant, and Lloyd George passed from the Ministry of Munitions to the War Office. Six months later he left the War Office to succeed Mr. Asquith as Premier. He at once improved our wartime government, and set up new Ministries—of Shipping, Food, Air, Health, Transport and National Service. He also persuaded the Admiralty to adopt the convoy system to protect our shipping against the increasing menace of German submarines. In the dark days in 1917 following the Bolshevik Revolution and Russian withdrawal from the war, his speeches inspired and cheered the nation. But in the same year America entered the war, and Lloyd George persuaded President Wilson to speed up the despatch of troops from America to Europe, and mobilised British shipping for their transport. He had a very clear grasp of the war machine, often seeing more clearly ahead than some of the generals.

When Italy seemed in imminent peril of defeat, he was determined that such defeat should not take place. He immediately set out for Italy, and his presence infused new courage into the Italians, and checked their flight. He then had English and French troops and artillery sent to Northern Italy by way of the Cenis Tunnel—just in time to prevent the Italian collapse. On his way back to England, he stopped at Paris, and there in a speech he declared that divided command of the armies would end in defeat. This statement aroused much opposition, but in the spring of 1918, when the Americans, 2,000,000 strong, had arrived, Lloyd George again visited Paris. A combined meeting of military and civil leaders took place, and he impressed them with the idea that numbers

without unity were useless. He was at last able to induce the British generals to accept the supreme control of the great and experienced French Marshal Foch.

When the war was over, with President Wilson and the French minister, Clemenceau, he was an outstanding figure at the Versailles Peace Conference and other conferences of the allied leaders. At the signing of the Peace Treaty in 1919 he was awarded the Order of Merit. He has been accused of being too tender to the Germans. It is true that he doubted whether the large reparation payments demanded by the victors would ever be obtained, and later history proved that he was right. His *War Memoirs* (published in 1933) show the wide grasp he had over the realities of the situation.

During his war-time and post-war administrations, Lloyd George made social reforms an important part of his programme. Women's Suffrage, the Disestablishment of the Welsh Church, the Fisher Education Act, Housing, Town Planning, Small Holding Acts, and measures to relieve unemployment were planned during these years. But after the Peace Treaty, the Coalition Government began to lose its popularity. Many people in Britain did not approve of the establishment of the Irish Free State; others feared the outcome of a conflict with Turkey, when in 1922 there was trouble between that country and Greece regarding the Peace Settlement. Finally, in October 1922, the Conservatives broke away, and Lloyd George was forced to resign.

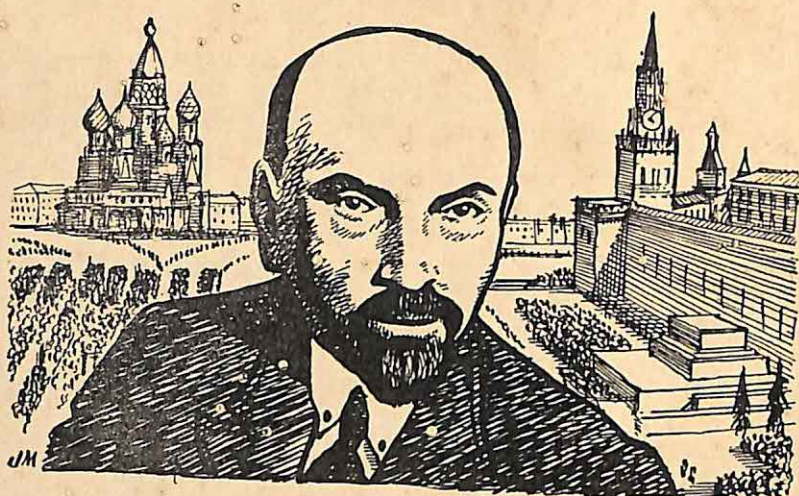
He never again held office. The Liberal Party had been hopelessly divided in 1916, and Asquith's supporters did not forgive Lloyd George, though an uneasy peace had been patched up. Leadership of the

Left Wing passed to the Labour Party which had greatly increased in strength and won the election of 1929.

Then came the great world industrial "slump" (1929-33) with world-wide unemployment—during which Mussolini and Hitler rose to power. A National Government was now formed. But when it failed to adopt a bold policy in support of the League of Nations, Lloyd George organized a "Council of Action" to press this policy on Parliamentary candidates. He continued to take an important part in working out schemes of reform, land policy, agricultural revival, town planning and industrial reconstruction.

When the National Government seemed to be drifting towards a second world war, Lloyd George made his last outstanding public speech—rising in Parliament to criticize the policy of the Premier, Neville Chamberlain, so effectively that Chamberlain was compelled to resign, and Mr. Winston Churchill took his place. Although Lloyd George was too old to accept office himself, he had the satisfaction of knowing that the Ministries he had set up in the First World War were successfully revived in the Second World War and once more helped to save his country.

Towards the end of his life, Lloyd George returned to Llanystumdwy, and settled amidst the scenes of his childhood. Shortly before his death the King raised the old statesman to the Peerage, with the title of Earl Lloyd George of Dwyfor—the river which had been the scene of so many of his boyish pranks. In March 1945, a few months before the German surrender, this great man passed peacefully away. He was laid to rest, as he had always wished, in a sheltered spot beside his beloved little river.



XVIII

LENIN (1870-1924)

MAKER OF SOVIET RUSSIA

IT MAY be that future generations will rank as most significant of all the historical figures of our time, the unimposing energetic Russian who remodelled the largest state of modern history—Vladimir Ilyich Ulyanov, or more commonly called Nikolai Lenin, the creator of the Union of Soviet Socialist Republics.

Few men have been so fiercely hated and so deeply revered. In the Red Square in the centre of Moscow is Lenin's tomb, and there thousands of Russians go every year to worship the memory of the man whom they regard as their saviour. The name of St. Petersburg is wiped off the map. It is now Leningrad, that is, Lenin's town. What immortality for one who was once an obscure, hunted, half-starved student!

Nikolai Lenin was born on the 10th April 1870 at

the little town of Simbirsk on the Volga. His father was a civil servant and his mother the daughter of a doctor. He was brought up in comfort and given a good education. But Russia at the end of the nineteenth century was a country on the verge of revolution. Her millions of poor illiterate peasants were still living very much the same life as the serfs had done. The officials and the Secret Police were the real rulers of the country in the service of autocratic Czars. Anybody who was suspected of revolutionary opinions was hunted down and either killed or sent to exile in Siberia. In 1887 one of many plots against the Czar Alexander III was discovered. Among those who were accused of throwing a bomb at the Czar was Lenin's brother, and he was sent to the gallows. Lenin was still at school when this happened, and the impression it made on his mind never faded.

This brother was only one of hundreds of young educated Russians—the "intelligentsia"—who wanted to build a new and better Russia and believed it could only be done in those days by secret societies such as the Social Democrats. Vladimir Lenin soon became one of their number. He had always been a reserved, serious-minded boy, and now for a short time he became a law-student in Petrograd. He had no intention of remaining a lawyer. He had one aim—to destroy the government of the Czar and to rouse the people to form a Socialist State. It is difficult to think of gentle, vague Robert Owen in connexion with the determined, clear-headed Lenin. Yet the Socialism of Lenin in a way grew out of that of Robert Owen. "The theory of Socialism originated in Britain, the home of the Industrial Revolution: in many ways the English Socialist writers in the twenties and thirties of the nineteenth

century anticipated all the main lines of later Socialist thought."¹

Lenin was influenced, as Socialists and Communists of recent times have been, by the writings of Karl Marx. This German philosopher of Jewish origin was born at Trèves, Prussia, in 1818 and he died in London in 1883. His book, *Das Kapital*—written in the British Museum—"has been blindly worshipped, and blindly hated, by millions who have not read a word of it, or, have read without understanding its obscure and tortuous prose." In this book Marx not only taught that all private property was wrong, but he also insisted that the only way in which the workers could gain power was by a violent revolution which would destroy what he called capitalism. Marx proclaimed the coming of a new age, in which all factories, etc., would be owned by the state and so held "in common" by the community, and this extreme Socialism is called Communism.

Around Lenin, under the spell of Marx, there gathered in St. Petersburg a band of students, teachers and workers, who looked forward to the coming revolution in autocratic, Czarist Russia. They wrote letters in invisible ink, they invented secret codes, and they worked a secret printing-press. Lenin soon got into trouble with the police and was sent to Siberia, and from there he went into exile abroad. From 1900-1917 Lenin and his equally courageous wife lived a life of great hardship and poverty. They moved all over Europe from one wretched lodging to another, often half-starved, but always full of energy and hope. They were always corresponding with their friends and fellow workers in Russia and elsewhere, and working out plans for the

(1) Ramsay Muir, *Civilization and Liberty*

revolution which they believed would come soon.

There may be people in England who still remember that pale, dome-headed little man, with his dark beard and his deep-set grey eyes. Perhaps he was reading very patiently at the British Museum. Perhaps he was talking or listening to other revolutionaries in his Finsbury lodging. Wherever he was, he became, because of his arresting personality, the leader of the movement in which he worked. The sort of impression he made on strangers is given in the words of a Danish visitor who saw him in his Swiss exile: "I met," he wrote, "a Mr. Ulyanov Lenin at Vevey, a terrible man who means to be master of Russia"—in 1909 a very intelligent prophecy.

It would be interesting to imagine what might have happened to Russia and to Lenin if it had not been for the First World War. Ten years earlier, in 1904, Japan had defeated the Russian navy, and this defeat was followed by certain reforms and a period of Dumas (parliaments). The World War was Lenin's opportunity, for its mismanagement and the terrible loss of life made the peasants and soldiers far more wretched and discontented than they had ever been before. He, from his look-out position in neutral Switzerland, believed that if Russia were defeated revolution would break out. When the war began in 1914, nearly all the Socialists of Europe, who had for a long time cried out against war and tried to unite the workers, decided after all to fight for their own governments. Lenin stood firm. In his wretched garret in Zurich, he lived and plotted. In his heart burned a flame of devotion and hope.

On a March morning in 1917 four Guards' regiments in Petrograd mutinied, and killed or imprisoned

their officers. A "Soviet," that is, a "Council," of soldiers and workers, met to give voice to the opinions of the people. The Russian Revolution had begun, and for Lenin the hour had struck. News came that the Czar had abdicated and a new government had been formed under Kerensky. But there was confusion everywhere. The people wanted peace, and "Bolshevism was brought to power by the universal longing to end the war."

Lenin now persuaded the Germans to let him travel across Germany back to Russia, and they let him go because they realized that he might make the chaos in Russia even worse and so prevent her from carrying on the War.

Lenin's name was well known. All through his exile he had been working out a programme with his followers who had for some time been called "Bolsheviks," which means "maximalists" or "extremists." An enormous crowd gathered at the station to welcome back the exile. "The Russian Revolution which you made," (March 1917) said Lenin to the members of the Petrograd Soviet, "is the opening of a new epoch . . . There must be another revolution, to give power to the Soviets, land to the peasants, bread to the starving, and peace to all men."

The government which Kerensky had formed was very weak; but it decided to go on fighting against Germany. In the summer of 1917 the Russian army under General Kornilov was in a desperate plight, and only by cruel punishments could he keep discipline among the troops. Even so Kerensky still tried to maintain the war spirit. He began to take measures against the Bolsheviks, and Lenin fled to Finland to wait in hiding until the moment was ripe.

In October 1917, Lenin's chief supporter, Trotsky,

was elected President of the Petrograd Soviet. Lenin decided that with this support in the capital, and with a bitter quarrel developing between Kerensky and Kornilov, the time had come to strike. The exciting and momentous events that followed, which made Lenin master of Russia, became known as the October or Bolshevik Revolution. Like a stage conspirator, with a false beard and painted eyebrows, Lenin moved gradually nearer the Russian frontier. As soon as he reached Petrograd, he began to urge the Bolsheviks to overthrow the Government at once.

"Bolsheviks?" said a foreign General who was on the spot, "I'll tell you what we do with such people. We shoot them." "You do," retorted an American onlooker, "if you catch them. But you will have to do some catching. You will have to catch several million."

On October 7th 1917⁽¹⁾ the Bolsheviks seized the Fortress of St. Peter and St. Paul and the Arsenal. The next day all the postal services were taken over by the Military Revolutionary Committee. On November 7th, Kerensky fled, and a cruiser fired on the Winter Palace where the members of Kerensky's government were powerless and fearful. At midnight on this momentous day, Lenin appeared before the All Russian Congress of Soviets and announced that the Revolution had succeeded. He read out decrees giving the land to the peasants, and giving the workers control over the factories. He offered peace to all who were fighting. "It was not a political speech," said one of his hearers, "it was a cry from the soul of a man who had waited thirty years for that one moment."

(1) November 7th by our calendar. At that time Russia still kept the Old Style or Julian Calendar.

The Bolshevik leaders formed themselves into a Committee called the Council of People's Commissars (or Ministers), with Lenin as Premier, and Trotsky in charge of Foreign Affairs. The Government was transferred to "Mother Moscow," and under the dictatorship of Lenin, Russia began one of the greatest experiments in mankind's long story.

Many of Lenin's party wanted to go on fighting Germany, which, they believed, stood for the same evils that the autocratic Czarist Empire had represented. Lenin was firm. "What will happen if you fight the Germans?" he cried. "The old army is not fighting. It cannot fight. It is exhausted. Only you, with the Revolution in you, want to fight. You know what will happen. You will fight. You will die. And the soldiers of the Revolution will be dead and the Czar will come back. Comrades, what is your will?" "Lenin! Lenin!" they roared in answer, such was the spell cast on them by this grim, determined man.

In December 1917, negotiations with the Germans began, and in March 1918, the Peace of Brest-Litovsk was signed. Russia was out of the war, and the Allies had to carry on without her help. To prevent the Germans from becoming masters of Russia's vast resources the Allies, led by officers of the Czar's army, supported for a time expeditions against the Bolsheviks. But these attempts to destroy the Revolution by Civil War were a failure.

One of the "White" leaders, as the anti-Bolsheviks were called, who was marching on Petrograd, was opposed by a young man from Georgia known as Stalin, "the man of steel." His army of factory workers was not exactly impressive. "Pallid, scowling, with shadowy, starved faces, narrow-shouldered and clumsy, in long trousers and old boots done up with

string, carrying sacks and cartridges tied together with string, this army in a drab mass rolled along the streets smoking cigarettes." But Petrograd was saved. The Bolshevik or "Red" forces, fired by the words of Lenin, by the enthusiasm of his war lord, Trotsky, and by the heroic example of Stalin, were by 1920 in control of the whole of the vast lands of Russia in Europe and Asia.

Lenin had always believed there was no middle road for Russia—for centuries she had been ruled by autocratic Czars and their officials and secret police. Revolution could only be carried out by dictatorship.

He formed a secret police force known as the "Cheka," and later as the "Ogpu," which was ordered to crush all opposition to the new government. Thousands of Russians, members of the old nobility and professional classes, were put to death, among them the Czar and his family. Thousands more escaped as refugees to other countries. To Lenin and his followers, the end—as in most revolutions—justified the terrible means.

While the Civil War was going on, Lenin introduced the system of "maximum" Socialism, or Communism, which he had been working out on paper for so many years. It reminds us of Owen's little experiment¹ at New Harmony, but with what a difference! Lenin tried to make communists not of a few earnest people but of nearly two hundred million of mostly uneducated Russians. His plan was simple in theory. All supplies—everything produced by the workers in agriculture, in the factories, in the mines—were taken over by the State. In exchange the workers were given the necessities they wanted, bread, clothes, boots, houses.

(1) See Chapter III.

The idea that all raw materials should be held in common, and that only those who produced something should be allowed to receive the finished article, was an age-old dream, which Lenin thought he could realize in six months. He could not. The peasants were ignorant and helpless. They wanted to own their land, and to make a profit on selling their goods, to be richer, and not poorer. In 1921 there was a terrible drought which ruined the harvest. Millions of peasants died of starvation. The position was desperate and Lenin decided to save the country from ruin by admitting that he had tried to run before he could walk. Complete communism must wait. "At whatever cost, the Soviet Republic must make use of all scientific and technical improvements; a single technical expert is worth ten communists," said Lenin, the realist.

So Lenin began what was known as his "New Economic Policy," which in part restored private enterprise and private trading. Under this plan the peasants were allowed to keep their crops and market it themselves. Once more some private property was allowed in Russia.

In 1922 the dangers of starvation were over, and Lenin began again gradually to develop socialism. He did this by encouraging the peasants to join their holdings together into big "collective" and mechanized farms which could be worked co-operatively. This plan was carried out on a gigantic scale by Stalin during the next few years. Millions of peasants have given up, willingly or unwillingly, their little farms and their primitive wasteful methods of work, once common throughout Europe, and joined in working communal or "collective" farms by means of modern machinery which they share in common.

It must be remembered that the "commune" (*mir* or village) is the oldest co-operative institution in Russian history, and one of the oldest in the world.

While Lenin was, in the short years of his triumph, reorganizing the lives of many millions of Russians, he was also making a new type of State. Instead of a Czarist "Empire," he planned for the vast land of Russia in Europe and Asia, with its many nationalities, each with its own language and customs, to be united into a Socialist State, a Union of Republics. This Lenin achieved by building on the Soviet, or Council, which had been known in Russia for many years. Every village and town, factory and collective farm, had its own soviet. These sent representatives to the district soviets. These in turn sent representatives to the provincial soviets, who in their turn sent candidates to the Central or Supreme Soviet meeting in Moscow.

At the centre of everything, guiding and inspiring all the activities of the soviets, was the central committee of the Communist Party. Those men and women who were officially known as "communists" were a comparatively small and highly trained corps, chosen for their loyalty, zeal and discipline. Lenin was General Secretary to the Party and at the same time Dictator-Premier of Russia.

There are seven republics in Russia, and together they form the *Union* that gives its name to the New Russia—the Union of Soviet Socialist Republics (U.S.S.R.).

It was a superhuman task that Lenin had set himself, but he was human after all. The strain of so gigantic a task was too much, and in 1924 after a long illness Lenin died at the early age of 54. In six years he had remade Russia. For a long time Russia could not believe that her hero and master was dead. Once

when an assassin tried to murder Lenin, Trotsky said, "When we think that Lenin may die, our whole life seems useless and we cease to want to live."

Lenin is one of the great personalities of history. His ideas were not very original. Most of them derived from the writings of Marx. But his courage and his faith were so tremendous that they lifted him to a pinnacle high above his fellows. In spite of that remoteness, Lenin lived as simply as a peasant. Everything he tried to do was for the peasants and the workers. He would spend hours talking with some humble villager, getting to understand his point of view, and finding out what the peasants really wanted. He was interested in every little detail of their lives. In the midst of the most difficult affairs of world politics, Lenin would, we are told, bother to find out whether the women workers in some factory or other had received their new aprons.

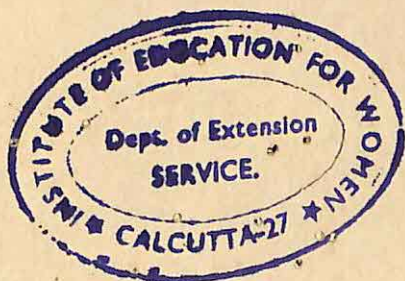
Lenin had always believed in a world revolution. "Workers of the world, unite!"—this call had stirred him to action. But when Russia fell out of the war in 1917 and was beset on all sides by her enemies, he began to realize that Russia and Russia's needs must come first, and his great successor, Stalin, himself once declared, "revolution is not for export."

The Western World frowned upon Lenin and his government. "Circumstances have compelled us to be cruel," said Lenin, "but later ages will justify us." Lenin had been brought up under the terrorism of the old autocratic Russia. "No one made the Russian revolution, unless it was the Autocracy," says a famous historian of Russia. And soon the down-trodden, illiterate peasants—ninety per cent of the population—began to say, "This is now our own country. We must learn to make it great and prosperous." But it was a

long time before the new Soviet Russia created by Lenin was recognized by other Powers.

After Lenin's death Stalin, the "man of steel," came into power. Under Stalin's direction Russia embarked upon the first of her remarkable Five Year Plans—which educated her peasants and other workers, modernized and developed her industries and farms, and vastly increased their productiveness. By thus looking into the future, Premier Stalin prepared his indomitable peoples to smite the Nazi invader; and in due course, by the Anglo-Soviet Alliance of 1942, Russia again joined with the British, as in Napoleon's day, to free their own land and Europe itself from the tyrant.

It was the first time in history that a whole nation set itself a "plan" to be worked out by the people as a whole within a given period. This colossal task meant great sacrifices on the part of everyone, but the Russians, not at first though in due course, embarked upon it like crusaders. They were fired with the zeal of the greatest revolution in history, and inspired by the memory of Lenin, past whose tomb in Moscow the silent procession still winds.





XIX

MARCONI (1874-1937)

PIONEER OF WIRELESS

No ONE man did more than Marconi to bring about the modern marvel of broadcasting. Guglielmo Marconi was the son of an Italian father and an Irish mother. He was born at Bologna in 1874, and after being educated at a school in Leghorn, he entered the university of his native town. Here his natural taste for mechanics and experiments was turned towards the study of electric waves, a subject which was at that time arousing great interest in many countries. One of his tutors was an investigator in this branch of scientific research, and under him Marconi studied the work of Heinrich Hertz, the famous German physicist.

While still in his teens, Marconi began to test laboratory theories by practical experiments. In the garden of his father's villa at Pontecchio, near Bologna,

he set up his first wireless "station," and before he was twenty he had made wireless transmitters and receivers which were capable of sending signals for a distance of over a mile. Efforts to interest the Italian government in his experiments failed and this led the young inventor to come to England in 1896. Here he was welcomed and encouraged in his work by Sir William Preece, the Engineer-in-Chief of the Postal Telegraph Department, who had himself made experiments in telegraphy by means of electric waves. He placed his laboratory at Marconi's disposal.

Successful tests were carried out from the General Post Office, St. Martin's-le-Grand, London, and "wireless" signals were sent to the Thames Embankment. These were followed by a transmission over a distance of four miles on Salisbury Plain. Next Marconi succeeded in sending messages across the Bristol Channel from Penarth in South Wales to Brean Down near Weston-super-Mare. In 1898 Marconi received permission to set up two experimental stations, one in the Isle of Wight, near the famous Needles rocks, and the other at Bournemouth. These stations were visited by Lord Kelvin, a pioneer of telegraphy, who had been responsible for the laying of the great ocean cables. Kelvin insisted on paying for the wireless messages he sent, for he wanted to show his faith in "wireless telegraphy" not only as an interesting scientific experiment but as a practical commercial undertaking.

Marconi next received the support of Lloyd's, the great shipping concern, and at their request he set up, in May of the same year, wireless apparatus at Ballycastle and Rathlin Island in the north of Ireland. Two months later Ireland provided another chance of showing the practical uses of wireless telegraphy, this

time in connexion with the newspapers. It was Dublin Regatta, and reports of the races were sent by wireless to a Dublin newspaper from a steamer in Dublin Bay.

"Wireless" as a "life-saver" was recognized when apparatus was installed at South Foreland Lighthouse and East Goodwin Lightship. During the two years that this service was working, several vessels and many lives were saved. In 1899 Marconi sent the first wireless messages across the English Channel, from the South Foreland to Wimereux in France, a distance of 32 miles. The British Admiralty had now come to realize the importance of this new invention, and on the occasion of the Naval Manœuvres three of the vessels taking part were fitted with wireless apparatus, and by that time the use of improved methods had increased the range of transmission to 60 miles.

In the same year the outbreak of the Boer War enabled the military value of wireless to be tested. Apparatus was sent to South Africa with the intention of using it at the base or along the railways; but it was soon realized that it could be used to greater advantage at the front, and the wireless operators were sent to De Aar, a strategic point in Cape Colony. At first the results were disappointing owing to the lack of sufficient balloons to lift the aërials to the required height. When the balloons were replaced by kites, it became quite easy to send messages from De Aar to the Orange River, 70 miles away, and other stations were set up at several points.

The year 1901 was a time of great effort and achievement for Marconi. He had by that time transmitted wireless signals a distance of 200 miles, and he was ambitious to send signals across the Atlantic Ocean. For

this purpose a powerful transmitting station was erected at Poldhu in Cornwall, and another station on the other side of "the herring pond," at Cape Cod in the United States. But in September when the stations were almost ready for use, severe storms wrecked the masts and aerial at Poldhu. These were repaired by the end of November, but about that time the Cape Cod station was also wrecked, and it seemed that the great experiment must be postponed for several months. Marconi, however, was impatient and could wait no longer. He sought for another station on the Atlantic seaboard, and in Newfoundland he discovered a disused barracks at Signal Hill, St. John's. He had his apparatus removed there and began the final preparations for the great attempt. He intended to use a balloon to raise the aerial, but the stormy wind blew it away. He then substituted a kite, but the kite suffered the same fate as the balloon. A second was with great difficulty kept flying at a height of 400 feet.

Marconi had instructed the operators at Poldhu to send out on a certain day the Morse letter "S." In the Morse Code that letter is represented by three dots or three short "clicks" with an equal interval between. The signal is so distinctive that it cannot be confused with any other sound. On a stormy December morning (Dec. 12th 1901) Marconi and his assistant waited breathlessly at the instrument. Marconi was holding the receiver when he gave a little exclamation. Then, handing the receiver to his assistant, he asked, "Do you hear anything?" The other man listened a moment, and then replied, "Yes, I hear the S's." Over and over again came the "Click! click! click!" Marconi knew that he had succeeded. The wireless waves had travelled the 1200 miles

that separated Newfoundland from Cornwall. Two months later on a voyage in the liner *Philadelphia* from Southampton to New York, Marconi received messages from a distance of 1551 miles, and letter signals from and over 2000 miles.

It was not long before the Poldhu station was strengthened, while the Canadian Government helped to provide funds for the erection of a new high-power station at Glace Bay, Nova Scotia. Just a year after the historic "Three Dots" clicks had been carried by electric waves from the Old World to the New, the first messages were exchanged by night between the two stations; and in the spring of 1903 news-messages were sent from Canada and published in *The Times*. Two years later, in 1905, during the Russo-Japanese War, one *Times* correspondent transmitted messages to the mainland from a ship specially fitted with wireless apparatus, and from that time a regular wireless news service has been in existence. The Canadian service had not been a success, and Marconi carried out a reconstruction of the station at Glace Bay, and erected a new long-distance station at Clifden in Ireland. This work took some years, and it was not until 1907 that the stations could be used for a limited news-service, and a little later for private messages.

During the First World War, Marconi served his country—then our Ally—first in the Italian Army, then in the Navy. He visited the United States as a member of an official mission from the Italian Government, and in 1919 he was appointed by the King of Italy as a delegate to the Peace Conference at Paris. In this capacity he signed the peace treaties with Austria and Bulgaria.

Even in this time of stress and strain, Marconi found time to carry on his researches in wireless trans-

mission. With an increasing number of transmitting stations, there was a danger of one station interfering with another, and to prevent this Marconi turned his attention to short and ever shorter waves. He discovered that short electric waves not only reduced interference but were more economical to use. As a result of his work, the British Government accepted the proposals of Marconi's company to build stations capable of working between Britain and Canada, South Africa, India, and Australia. The first of these stations—that for communication with Canada—came into use in October 1926.

Marconi carried on his wireless researches for another eleven years. In 1923 he joined the Fascist Party. Mussolini greatly appreciated Marconi's gesture, and, besides bestowing numerous honours upon him, treasured a friendship which grew deeper and deeper with their renewed contacts. The Duce appointed him a member of the Fascist Grand Council and later made him a member of the Italian Royal Academy. During the Italian conquest of Abyssinia, he volunteered for active service.

Marconi died in July 1937, leaving a record of achievement and success equalled by very few men. He received many notable recognitions of his work in the form of decorations conferred upon him by his own sovereign and many other European rulers. He was awarded the Nobel Prize for Physics, the Albert Medal and the Kelvin Medal, and was given honorary degrees at Oxford, Cambridge and other British Universities. To his researches we owe much of the practical application of a discovery that has revolutionized the interchange of news and culture throughout the world. Broadcasting, a direct outcome of Marconi's work, now takes rank as one of the necessities of life.



XX

FRANKLIN DELANO ROOSEVELT
(1882-1945)

PRESIDENT OF THE UNITED STATES
IN THE SECOND WORLD WAR

WHEN, in the early morning of 13th April 1945, the free world heard that Franklin Roosevelt had died suddenly on the previous afternoon, men and women everywhere felt that they had lost a personal friend. That resonant, musical voice, with its slight American drawl, would never come over the air again with words of encouragement and promise for the future. Flags drooped at half mast, and people asked each other anxiously what would happen, now that the world had lost one of its wisest leaders on the very eve of the Victory of the United Nations over Germany and Japan.

Franklin Delano Roosevelt was born in his father's country house of Hyde Park in New York State on

30th January 1882. In this great American citizen, Dutch, French, Scottish and Irish strains were mingled. But in spite of his Dutch name, he was mainly English in blood, with several Pilgrim Fathers among his ancestors. His was a happy childhood. He was rather a delicate boy and was not sent to school till rather late. He was devoted to his mother, a wise and clever woman, and by her and his father he was brought several times to Europe. The Atlantic crossings in a great steamship, which in those days took something over a week, must have delighted him, for he loved ships and wanted to become a sailor in the American Navy. It was decided, however, as he grew older, that it would be better for him to go to College at Harvard.

By this time he was a tall young man, handsome, good at all sports and fond of political arguments. He liked people and could not bear to hear of injustice, poverty or suffering. This made him a champion of the rights of democracy and, like his parents, a member of the Democratic party—that is, the party which spoke for the rights of ordinary people such as farmers and artisans, and which wanted to protect them when the interests and claims of rich manufacturers and bankers appeared to make it difficult for them to earn a decent living. Most of Franklin Roosevelt's friends were themselves rich young men who belonged to the other party in American politics, the Republicans, but they liked him none the less.

Less than a year after the completion of his college course, Roosevelt married his distant cousin Eleanor Roosevelt, the niece of Theodore Roosevelt, the famous Republican President. They were both very young when they settled down in their new home in that city which its citizens call "Little Old New York," though it is the second largest city in the world; a city of sky-

scrapers, great buildings of sometimes as many as fifty or more storeys, busy streets thronged with hurrying passengers, glittering shops, and a magnificent harbour crowded with the ships of all the world.

Here Franklin Roosevelt became a member of an important firm of lawyers, and later was elected a Senator in the Congress (or Parliament) of the United States. He fought against all mean and unfair dealings in elections. He became Assistant Secretary to the Navy. Here at last was something near to his boyhood's dream; and it fell to his lot, when America at length in 1917 took her part in the *First World War*, to see that she had a strong fleet, properly equipped to deal with German cruisers and U boats, and he would gladly have fought in those ships himself.

In the last summer of the war, when the first American soldiers were arriving on the battlefields of France and Flanders, and the tide was at length beginning to turn against Germany, Roosevelt came on naval business to London. English people liked the tall handsome American, with his fine head and charming manners, and he soon made many friends.

In 1920 the United States had to choose a new President to succeed Mr. Woodrow Wilson, and the Democratic party asked Roosevelt to stand for election as Vice-President. But by this time the American people were weary of Europe and its troubles and wanted to have no more to do with President Wilson's scheme for a League of Nations. The Democrats were heavily defeated and Roosevelt went home to New York and began to work again as a lawyer.

In his spare time he offered to re-organize the Boy Scout Movement in the city, but he had overworked and had become terribly ill with the disease known as "infantile paralysis." Slowly he struggled back to

something like health, but he had lost the use of his legs. "I'll beat this thing!" he exclaimed, and with magnificent courage he set to work to learn once more to stand—at first with crutches, and at last, after seven years of treatment and effort, without them. But he could never again take active exercise except swimming.

Now that he was well again, he threw himself once more into politics. He became Governor of New York State and people began to say that perhaps one day he would be President. In the meantime his country was falling upon evil days. When the First World War came to an end in November 1918, Americans who had been fighting abroad came home, desirous of forgetting the misery they had left behind in Europe. There was plenty of work making goods to supply the place of all that had been destroyed.

Men grew rich, and their young sons and daughters were able to race about the wide spaces of America in high-powered cars. Germany and other European countries needed money. American business men lent it but expected to receive large annual sums as interest. New business schemes were launched; many of them very risky. All sorts of people from wealthy mill owners to typists and office boys began to speculate, trying to buy shares in the new ventures when they were cheap in the hope of selling them again as they grew dear. This state of affairs could never last. Soon the mines and factories of Europe came back into use and there was less demand for American goods.

The new companies failed and the speculators, rich and poor alike, lost their money. Factories and workshops were closed. Millions of men—no one knew quite how many—were out of work. There was no social insurance in America, and starvation seemed

to stare people in the face. The government tried to assure them that all would soon come right again. They put heavy taxes on goods from other countries so that the American markets might be free for home produce. But this only meant that foreign countries could not take American goods because—as Americans kept out foreign goods—they had no way of paying for them, and for the same reason they could not pay to America the large sums borrowed during and since the war. Men and women sank into despair, and lost hope. This terrible industrial depression and unemployment of the 1930's affected the whole world, and it partly accounted for the rise to power of Mussolini and Hitler.

It was to save them in this situation that in 1932 the citizens of America turned to Franklin Roosevelt and elected him President of the United States. Never had they done a wiser thing. Far from being daunted by the misery of his fellow countrymen, Roosevelt had already gathered round him a group of able friends—his “Brains Trust” he called them—with whom he had worked out plans to give the common people of America, the artisans, farmers, small shopkeepers, dock labourers and miners, what he called a “New Deal,” asserting the right of all people to life, liberty and the pursuit of happiness.

He persuaded Congress to pass a measure of Social Insurance providing Old Age Pensions and Unemployment Benefits. He got them to consent to spend vast sums of money on a vast programme of reform, including the building of great dams on the Colorado River and in the Tennessee Valley. These schemes brought back into cultivation a great area laid waste by the clearing of forests and by the consequent “denudation” (the drying up and blowing away of

the fertile soil), and they provided cheap electricity for the farmers and manufacturers who lived there. Such schemes soon gave new hope to thousands of men and women who had been workless. But when the President began to encourage the American Trade Unions, and to speak of all industries raising wages and shortening hours of work so that workers might be able "to buy and use the things that their labour produces," then "big business" men looked askance at him. It seemed to them that he was interfering with their right to decide how much they could afford to pay their workers.

In April 1933 Ramsay MacDonald went to see Roosevelt at Washington, and in May the President sent a message of encouragement to the heads of the fifty-four States attending the disarmament and industrial conferences of that year.

Unlike the Prime Minister of England, the President of the United States need not be the leader of the largest party in Congress. It may happen that the greater number of members disagree with him, as they did now with Mr. Roosevelt. This did not discourage him. He determined that he would explain his plans to ordinary men and women and children—to the very people in fact whom he was trying to help. He began what he called his "Fireside Chats" with them. Sitting by his own fireside, he spoke over the radio to family parties sitting round the fire in their smaller homes. His voice became familiar to all and they understood how much he hated anything which he thought was unfair to the humblest of them. So it came about that when, at the end (1936) of four years, American citizens once more had to choose their President, Franklin Roosevelt was elected again by a huge majority of votes.

In this "second term" (as it is called in America) of his office, the President had not only difficulties at home to face. He knew that in Europe war clouds were beginning to gather again. He loved freedom, he denounced Dictators, and he well knew that Mussolini in Italy and Adolf Hitler in Germany were depriving people of freedom. But he so hated war, and all the evil things that it brings in its train, that over and over again he called on European statesmen to keep the peace. And to Canada in 1936 he made his historic pledge: "I give you the assurance that the people of the United States will not stand idly by if Canadian soil is threatened by any other Empire."

When in September 1939 Hitler invaded Poland and war was declared, he knew in his heart that no free people anywhere would be safe for long if Nazi Germany won. He would gladly have sent help—arms and aeroplanes and other supplies—at once to France and Britain, but this time again the American people meant to keep out of the war. They had a law which forbade the sale of arms to either side, and by this law they seemed determined to abide. Patiently the President tried to bring his people to realize that, if the cause of freedom was defeated in Europe, it must soon be defeated everywhere.

Already in June 1940 men had seen the *Fall of France*. The time for the American election again drew near. Englishmen knew that Roosevelt was anxious to help them. They waited eagerly in the dark days of the autumn of 1940 to hear what would happen—at a time when in the *Battle of Britain* the heroic Royal Air Force and Royal Navy were defeating Hitler's attempts to invade England; at a time, too, when the British Commonwealth stood alone. But no President had ever yet served for a third term, and many great Americans

of the past had spoken strongly against any President so doing. It was, therefore, with tremendous relief that the free world listened to the broadcast which told that the American people had chosen Franklin Roosevelt a third time as President.

By this time, with the over-running of Europe, Roosevelt knew his people were beginning to realize that if Britain was conquered by Germany, the United States could not long be safe. "Let no one imagine that America will escape . . . that this Western Hemisphere will not be attacked," he warned his people. He knew that in this mood they would be ready to help, not for their own sakes only, but out of real sympathy with the people of England whose homes were being mercilessly bombed. He called for "all-out aid for Britain, increased and again increased, until total victory is won." Soon the shipyards and factories of America were humming and roaring as ships and aeroplanes came off the assembly lines, and meat and dried milk and eggs were packed. Congress passed a law by which America agreed to lend to Great Britain anything she needed. This was the beginning of the famous "*Lend-Lease*" arrangement (March 1941) and the U.S.A. became indeed "the arsenal of democracy." In May 1941 the President visited the Virginian birth-place of Woodrow Wilson, who, Roosevelt said, "taught us that democracy could not survive in isolation."

In June 1941 Hitler (imitating Napoleon) attacked *Soviet Russia*, to whom the U.S.A. now granted a credit of 100,000,000 dollars. The autumn of that year the free world was suddenly thrilled to hear that the President of the United States and the Prime Minister of England, Mr. Churchill, had met on board a ship at an Atlantic port. For the first time during the war

these two great leaders had conferred together and had drawn up a declaration, known as the *Atlantic Charter*, by which they pledged themselves and their countrymen to do all in their power to secure freedom — "freedom of speech, freedom in religion, freedom from want, freedom from fear," as President Roosevelt said later, "for all the men in all the lands."

At the end of that year 1941, the United States Navy was, without a declaration of war, attacked by Japan. The American fleet, lying peacefully at anchor in *Pearl Harbour* (Hawaii Island in the Pacific,) was destroyed, and thousands of sailors killed or drowned. From that moment America was at war with Japan, and as Japan was the ally of Germany she was almost at once at war with Germany too.

For some months the sky was dark indeed. Barely two months after Pearl Harbour, Singapore fell. The Japanese carried all before them in the Pacific, and the German might was unbroken in Europe; but the President was as undaunted as he had been ten years earlier when his own country seemed to be ruined. He now threw the whole energy of her people and her vast wealth into building up a great store of ships and guns and aeroplanes.

On his sixtieth birthday in January 1942, he had messages of affection and admiration from people in all the allied countries. By the summer the American people were producing what he described as "a flood" of arms of all sorts. In November 1942 American and British forces landed on the coast of *French North Africa*. The Germans and Italians, fighting in North Africa, supported by their warships in the Mediterranean, were taken completely by surprise. A little later, the enemy forces were driven out of Egypt by Montgomery's great victory at El Alamein,

which saved Egypt and the Suez canal from the enemy. Then at the end of January 1943, Mr. Roosevelt and Mr. Churchill met again for an allied council of war. This time it was in the pleasant town of Casablanca on the African coast.

It was a courageous thing to do, for no President of the United States had ever before left his country in war-time; and the subjects of discussion too were courageous, for the allied leaders were no longer merely trying to avoid defeat. They now looked forward to complete victory. In May 1943 Mr. Churchill and Mr. Roosevelt announced full agreement on all points "from Great Britain to New Britain (in the Pacific)—and beyond . . . in the manner of members of the same family."

Before the year 1943 was out, Mr. Roosevelt, in spite of his eleven years of strenuous work for his country and his own physical disability, had visited Brazil and Mexico; with Mr. Churchill, he had met in Cairo Generalissimo Chiang-Kai-Chek of valiant China, and at Teheran in Persia the great Premier of the U.S.S.R., Marshal Stalin.

With the *Fall of Italy* in September 1943, the war had entered on a new phase. And now, once more, the time for election drew on. Men the world over began to ask anxiously whether 1945 would see a new leader at the helm in the United States. For many weeks Mr. Roosevelt gave no sign of his intentions, but at length he said that if he were nominated he would stand. Once more, in spite of criticism at home, he was elected with a huge majority for a fourth term—unique in American history. The free world heaved a sigh of relief.

It was clear now that the end of the war was almost in sight, and in a speech to Congress at the beginning

of 1945, the President declared that his country "could not and would not shrink from the responsibilities which follow in the wake of battle." He promised that America would not this time abandon the effort to create a new world in which men should be able to live their lives free from the fear of poverty and war. A month later he was in conference again with Mr. Churchill and Premier Stalin at Yalta in the Crimea. This time, as he told the American people in a broadcast, the three allied statesmen had made plans not only for fighting the war to its conclusion, but also for calling representatives of all the United Nations to a Conference at San Francisco, which should draw up a new charter to secure the world from future wars. This was the birth of a new and (it is hoped) a better league of nations, known as U.N.O., the *United Nations Organization*. "World events and the needs of all humanity," said Roosevelt, "have joined the culture of Asia with the culture of Europe and of the Americas, to form for the first time a real world civilization."

That Conference of men and women of 47 nations met in the lovely city standing on its bay on the Pacific coast on 25th April 1945—the year that saw the defeat of both Germany and Japan. But America's great President was not at that Conference to bid its members God-speed. He had died in his study a fortnight earlier, worn out by his high-hearted endeavour to lead men towards realizing his own vision of a world set free from want and fear. He left to his people in America an institution for the treatment of infantile paralysis at Warm Springs in Georgia and his own family home at Hyde Park near New York. He left to men and women and children the world over, his magnificent example of faith, courage and hope in dark days and in fair.